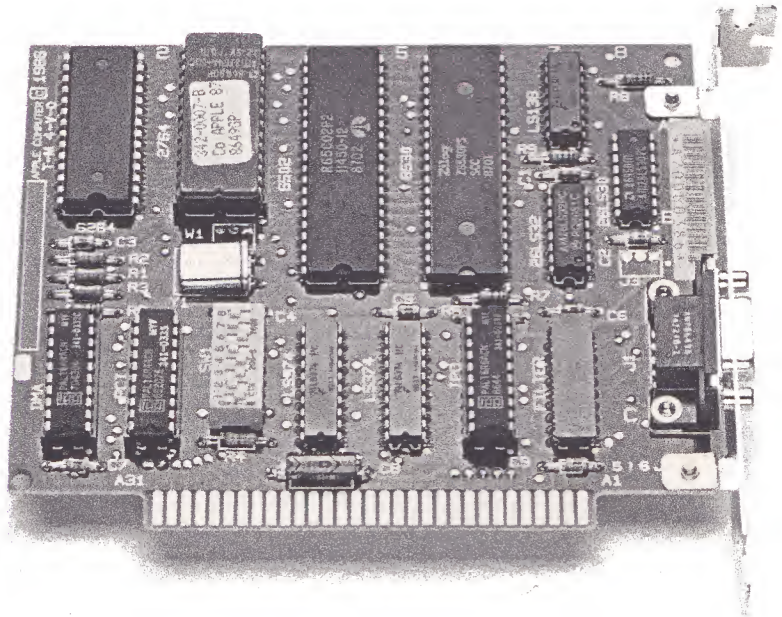# Apple® LocalTalk™ PC Card Owner's Guide

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WARNING

This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC rules. See instructions if interference to radio or television reception is suspected.

Apple® LocalTalk™ PC Card Owner's Guide

Contents

Figures and tables

Radio and television interference

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and complies with the limits for a Class B computing device in accordance with the specifications in Subpart J, Part 15, of FCC rules. These rules are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation, especially if a "rabbit-ear" television antenna is used. (A rabbit-ear antenna is the telescoping-rod type usually found on television receivers.)

You can determine whether your computer is causing interference by turning it off. If the interference stops, it was probably caused by the computer or its peripheral devices.

If your computer system does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

□ Turn the television or radio antenna until the interference stops.

□ Move the computer to one side or the other of the television or radio.

□ Move the computer farther away from the television or radio.

□ Plug the computer into an outlet that is on a different circuit than the television or radio. (That is, make certain the computer and the radio or television are on circuits controlled by different circuit breakers or fuses.)

□ Consider installing a rooftop television antenna with a coaxial cable lead-in between the antenna and the television.

If necessary, consult your authorized Apple dealer or an experienced radio/television technician for additional suggestions.

You may find helpful the following booklet, prepared by the Federal Communications Commission: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402.

Important This product was FCC-certified under test conditions that included use of shielded cables and connectors between system components. It is important that you use shielded cables and connectors to reduce the possibility of causing interference to radios, television sets, and other electronic devices. For Apple peripheral devices, you can obtain the proper shielded cable from your authorized Apple dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

Preface

About This Manual

This manual is your guide to the LocalTalk™ PC Card. The first three chapters explain how to install the card in your IBM PC or compatible computer, and introduce the printing capabilities of the software provided with the LocalTalk PC Card. Later chapters give you step-by-step instructions for using the LaserWriter® printer to print files you create with the PC. These chapters also offer hints and suggestions for working with files from specific word-processing and spreadsheet programs.

To use the LaserWriter and LocalTalk PC Card effectively, you need to be familiar with your PC, the AppleTalk® network system, and the applications used to create the files you want to print.

The manual tells you how to

□ install the LocalTalk PC Card and the PC LaserWriter Program supplied with the card

□ select printing options for a file created with the PC

□ print with the Apple® LaserWriter from your PC

□ print using a set of menus or print directly from the DOS prompt (C> or A>)

How to use this manual

After installing the LocalTalk PC Card in your computer, you need only read the chapters in this manual that cover the specific types of files you want to print on the LaserWriter. Later on, if you want to print a file created with another application, you can read the chapter about that application. (The basic LaserWriter printing choices for the various applications are similar, however, so you'll probably know intuitively what to do.)

Chapters 4 through 9 cover files created with WordStar, MultiMate, Lotus 1-2-3, and with applications that create files in PostScript® format, such as Microsoft Word. Also covered are files prepared in ASCII (American Standard Code for Information Interchange) format or prepared for use with a Diablo 630 printer; files created with most PC programs can be configured in one or both of these ways. Thus, you can use the LaserWriter to print almost any file from your PC regardless of the application you used to create the file.

The appendixes contain technical information and advanced operating instructions, as well as samples of LaserWriter fonts and character sets.

Now you're ready to go. Enjoy printing with the Apple LaserWriter.
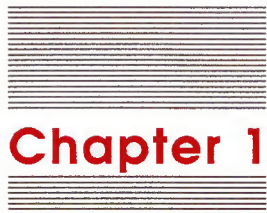
Chapter 1

About the LocalTalk PC Card

The LocalTalk PC Card lets you print files on the LaserWriter that were created with PC applications. This chapter tells you how the LocalTalk PC Card, the LaserWriter, your PC, and the AppleTalk network system operate together.

If you want to know more than is presented here, see the *LocalTalk Cable System Owner's Guide* and the *LaserWriter and LaserWriter Plus* manual.

❖ *By the way:* In this manual, PC refers to the IBM PC, XT, and AT; Compaq; AT&T 6300; and other IBM-compatible computers.

About the card

The LocalTalk PC Card is a half-size board that fits into one of the slots in your PC. A connector on the board attaches to a LocalTalk connector box, which links your PC to the LaserWriter through the LocalTalk cable system.

The two disks packaged with the card are the Startup disk and the Program disk. The software on the two disks constitutes your PC LaserWriter Program.

The Startup disk contains software for connecting your PC to the network and for installing the program on your PC; the Program disk contains software that lets you print files created with WordStar, MultiMate, Lotus 1-2-3, Microsoft Word (or other applications that create files in PostScript form), as well as regular text files in ASCII format or files prepared for printing on a Diablo 630 printer.

❖ *Note:* You can print a file created with other applications by converting the file to ASCII format and using the ASCII printing feature. Most applications have their own method for converting a file to ASCII format.

Here's an overview of how to use the PC LaserWriter Program to print on the LaserWriter:

1. Create a file with an application such as WordStar or Lotus 1-2-3.

2. Save the file, exit from the application, and start the PC LaserWriter Program. From a menu, choose the name of the application you used to create the file.

3. Select the printing options you want for the file.

4. Press the F10 key to print the file on the LaserWriter.

When you press the F10 key, three things happen. First, the PC LaserWriter Program converts your file into PostScript, a language that the LaserWriter understands. Second, the converted file is stored temporarily on the disk, and then sent over the network to the LaserWriter. And third, the LaserWriter prints the file according to the options you selected.

Your original file—the one you created with the application—is not affected by the process.

PostScript is a specialized programming language that is built into the LaserWriter; it is extremely versatile and can print text and graphics in almost any size or shape. Appendix E shows one example of how you can add PostScript commands to a PC file to enhance your printed documents.

Another advanced PostScript feature is its ability to interface with typesetting machines such as the Linotronic 100 and 300. These machines can accept and print PostScript files directly, in the event that you want to typeset the files that you have converted to the PostScript format.

What you get with the LocalTalk PC Card

The LocalTalk PC Card box contains
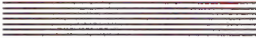
☐ the LocalTalk PC Card

☐ the Startup disk and the Program disk

☐ this manual

If your network requires other LocalTalk products, such as a LocalTalk Locking Connector Kit, a cable extender, or a custom wiring kit, you can get them from an authorized Apple sales representative.

Chapter 2

Installing the
LocalTalk
PC Card

This chapter tells you how to install the card in your PC and how to install the PC LaserWriter Program onto a hard disk or two floppy disks.

Necessary equipment

You'll need the following equipment to use the LocalTalk PC Card:

☐ a PC-compatible computer with at least 256K of RAM

☐ two floppy disk drives or one floppy disk drive and a hard disk

☐ PC-DOS or MS-DOS version 3.1 or a later version

☐ a LocalTalk Locking Connector Kit—DB-9 (part number M2065)

Installation

Installation is a three-step process:

1. Install the card in your computer.

2. Attach the computer to the LocalTalk cable system.

3. Install the PC LaserWriter Program on your computer's hard disk or on two floppy disks.

Installing the card

The LocalTalk PC Card is designed to fit into an expansion slot in the PC, like the other plug-in boards in your computer. The installation process does not require any special tools or technical knowledge. However, if you are at all hesitant about installing the LocalTalk PC Card, ask an authorized Apple sales representative for assistance.

Follow these steps to install the card:

1. Unplug the computer from its electrical outlet.

2. Remove the computer's cover.

    Refer to your computer's owner's manual if you have questions about removing the cover.

Warning Pay strict attention to the danger messages inside your computer. Various electronic parts may hold high voltages even if the power is off.

Important Before taking the LocalTalk PC Card out of its protective wrapping, touch the computer's back frame. This will prevent static electricity from possibly damaging sensitive electronic components.

3. Check the On/Off settings of the eight DIP switches on the card.

The DIP switches are located on the lower-left corner of the card. (See Figure 2-1.) Table 2-1 shows their proper On/Off settings. They should already be set correctly, but if they're not, reset them. Use a ballpoint pen or a small screwdriver to move the switches gently to their proper settings.
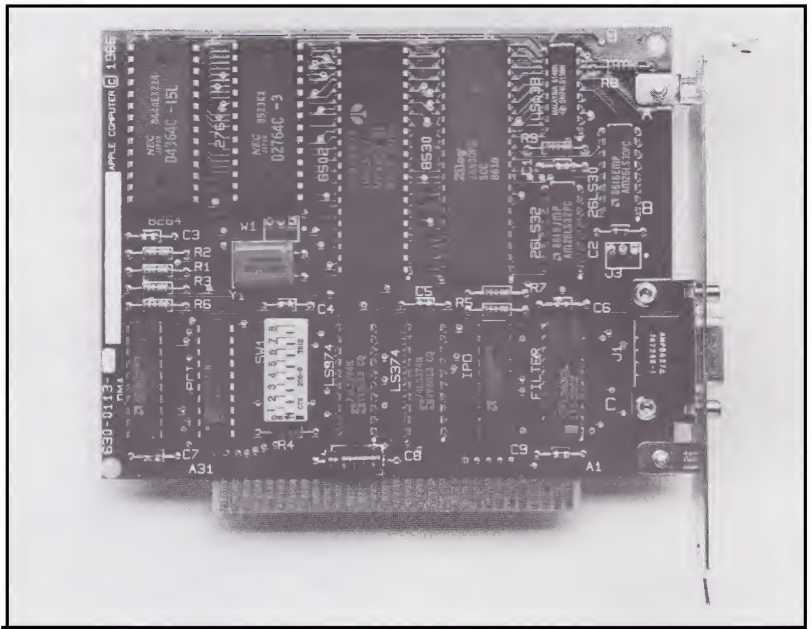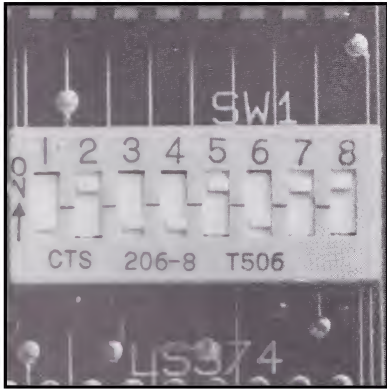
Figure 2-1
DIP switches

Table 2-1
DIP switch settings

Switch	1	2	3	4	5	6	7	8
On		x			x		x	x
Off	x		x	x		x		

If your computer contains other add-on boards, you may need to change the switch settings on the LocalTalk PC Card or on the other boards. Specifically, if you already have a serial port in your PC that is configured as COM2, you will have to change the switch settings or reconfigure that serial port. See Appendix C for details about the DIP switch settings on the LocalTalk PC Card.

4. Select an empty slot for the card.

   You can put the LocalTalk PC Card into any slot. However, on the IBM PC/XT, do not use slot 8.

   If the slot has a back panel cover (an L-shaped piece of metal that acts as a dust cover), remove it as illustrated in Figure 2-2. You won't need this slot cover when the LocalTalk PC Card is installed.

5. Insert the LocalTalk PC Card into the slot.

   Hold the card so that the connector at one end is at the rear of the computer and the tab at the bottom is directly above the computer's empty socket. Slide the card straight down into the slot as shown in Figure 2-3.

Figure 2-2
Removing the back
panel cover
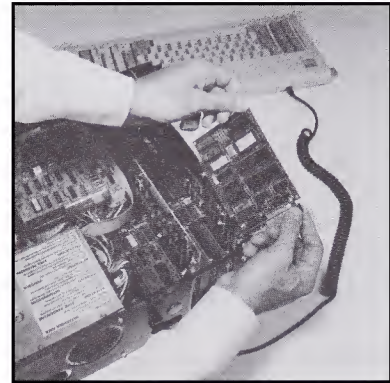
Figure 2-3
Inserting the card

The gold-colored metal strips on the tab at the bottom of the card will fit snugly into the socket. You may have to push firmly to get the card fitted into its socket, but don't force the card or rock it back and forth to make it fit. The gold strips are electrical contacts; rocking will scratch them and may destroy the circuit. Usually the card will fit with only mild pressure.

After placing the card in its slot, align the screw hole on the card's mounting bracket with the screw hole on the computer frame. Make certain that the D-shaped connector on the card fits through the opening on the computer's back panel.

6. Install the mounting screw and gently tighten it.

Do not overtighten the screw. Because IBM PCs have slightly different-sized slots and frames, overtightening the screw may tip the card and pull the contacts out of their socket. If that occurs, loosen the screw, straighten the card, and tighten the screw just a bit.

7. Replace the computer's cover.

You're now finished installing the LocalTalk PC Card. However, don't turn the power back on yet. You still must connect the computer to the network.

Connecting the computer to the network

You will need a LocalTalk Locking Connector Kit—DB-9 to connect your computer to the network. If the LaserWriter is not already connected to the network, you will need a separate connector kit for it.

1. Make sure the power to the computer is off.

2. Attach the D-shaped connector from the connector kit to the card's corresponding connector at the back of the computer as shown in Figure 2-4.

Tighten the thumbscrews. Be careful not to overtighten them.

3. Attach one end of the LocalTalk cable to the connector box, and attach the other end of the cable to the connector box for the LocalTalk cable system.

If you have questions about how to connect to the network, see the *LocalTalk Cable System Owner's Guide* included with the connector kit and the *LaserWriter and LaserWriter Plus* manual that you received with the LaserWriter.

Your IBM PC is now part of the AppleTalk network system.

4. Now turn on the power to your computer.
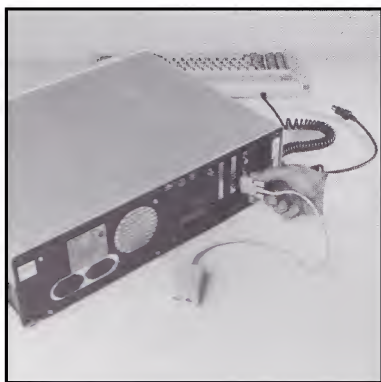
Figure 2-4
Attaching the LocalTalk connector box

Installing the PC LaserWriter Program

The PC LaserWriter Program contains a driver program for the AppleTalk network system, plus a group of utilities that convert files produced on the PC for printing with the LaserWriter. The driver program is on the 5.25-inch disk labeled *Startup,* and the utilities are on the 5.25-inch disk labeled *Program.* The 3.5-inch floppy disk contains the driver and utilities on one disk.

If you install the PC LaserWriter Program on a hard disk, the AUTOEXEC.BAT file on the disk is modified to load the driver into memory automatically whenever you start up your PC. Having the driver in memory (known as being memory-resident) gives you quick access to the network and the LaserWriter. The conversion utilities are put into a directory named LWDIR.

If your computer does not have a hard disk, the PC LaserWriter Program can be installed on two 360K (5.25-inch) floppy disks:

- **The working Startup disk:** *You will use this disk in place of the DOS disk to start your PC.* This disk will contain DOS, the driver, the COMMAND.COM file from DOS, and an AUTOEXEC.BAT file that loads the driver into memory automatically.

- **The working Program disk:** You will use this disk to start the PC LaserWriter Program when you want to print with the LaserWriter.

- ❖ *Note:* If you already use a customized disk (a boot disk) to start your PC, you do not have to create the working Startup disk. As described in the installation procedure for floppy disks, you can install the driver on your boot disk and can then continue to use it to start your PC.

The PC LaserWriter Program can also be installed on a single 720K (3.5-inch) floppy disk. In that case you will have a combined working Startup and Program disk.

Using the hard disk drive

Follow these steps to install the PC LaserWriter Program on your hard disk:

1. Turn on your PC and load DOS. When the prompt appears, place the PC LaserWriter Startup disk in drive A.

2. Type `a:install` and press Return. Read the introductory message and then press any key to continue.

   If you want to stop the installation process, press Ctrl-C.

3. Type the letter designating your hard disk (usually C).

   The driver on the Startup disk is installed on the hard disk, and the AUTOEXEC.BAT file is modified.

4. If you are using the 360K (5.25-inch) installation disks, remove the Startup disk from drive A and replace it with the Program disk. Press any key.

   The files on the Program disk are installed on the hard disk in the LWDIR directory.

   If you are using the 720K (3.5-inch) disk, the utility files will be copied automatically after the AUTOEXEC.BAT file is modified.

5. When the installation is finished, remove the Program disk from drive A and store it and the Startup disk in a safe place. You won't need them any longer to run the PC LaserWriter Program.

You're finished with the installation.

You should now select a LaserWriter as your printer and then send a test page to it to verify that the installation was successful. See "Selecting and Testing the LaserWriter" later in this chapter.

From now on, whenever you start up your PC, the driver will be loaded into memory automatically. Then, while you're working, you can start the PC LaserWriter Program for printing at any time by returning to the DOS prompt, typing `LW`, and pressing Return.

Important Installing the PC LaserWriter Program on your hard disk creates an AUTOEXEC.BAT file if your disk doesn't have one. If the file already exists, the installation adds one line, `C:\ATALK`, to the file and modifies the path statement to include `C:\LWDIR`, which accesses the LWDIR directory.

Using the floppy disk drives

If your PC does not have a hard disk, you will need two formatted floppy disks to install the PC LaserWriter Program.

Format one disk using the `format /s` DOS command. That disk will become your working Startup disk.

Format the other floppy disk with the DOS command `format` (without the `/s` option). That disk will become your working Program disk.

If you have questions about formatting a floppy disk, refer to your DOS reference manual.

❖ *Note:* If you already start your PC with a boot disk and it has 50K of space available, you won't need a disk formatted with the `/s` option. In the following installation steps, substitute your boot disk for the disk formatted with the `/s` option.

To install the PC LaserWriter Program on two floppy disks:

1. Turn on your PC and load DOS. When the prompt appears, place the PC LaserWriter Startup disk (the one that came packaged with the card, not the one you formatted) in drive A.

2. Type `a:install` and press Return. Read the introductory message; then press any key to continue.

3. Type the letter designator of your other disk drive (usually B).

4. Insert the disk formatted with the `/s` option (or your boot disk) in drive B. Press any key. The driver program from the disk in drive A is installed on the disk in drive B, and the AUTOEXEC.BAT file is created or modified. The disk in drive B is now your working Startup disk.

5. If you are using the 360K (5.25-inch) installation disk, remove the disk from drive A and replace it with your Program disk. Press any key.

6. If you are installing on a 360K (5.25-inch) disk, remove the disk from drive B and label it as your working Startup disk. Insert the other formatted disk (the one formatted without the `/s` option) into drive B. Press any key.

   If you are installing on a 720K (3.5-inch) disk, you do not need to swap disks.

   The files on the disk in drive A are copied to the disk in drive B.

7. When the installation is complete, remove the disk from drive B. Label that disk as your working Program disk. You will use it to load the PC LaserWriter Program whenever you want to print files on the LaserWriter.

8. Remove the disk from drive A and store it and your original Startup disk in a safe place. You won't need to use them to print on the LaserWriter.

You're finished with the installation.

❖ *Note:* Do not write-protect your new working Program disk. The PC LaserWriter Program needs to write a file on your disk in order to print successfully.

You should now select a LaserWriter as your printer and then send a test page to it to verify that the installation was successful. See the next section, "Selecting and Testing the LaserWriter."

From now on, use your working Startup disk (or your boot disk) to boot your PC. The AppleTalk driver for the AppleTalk network system will be loaded into memory automatically. Then, to start the PC LaserWriter Program for printing, return to the DOS prompt (A>), insert the working Program disk into drive A, type LW, and press Return.

You can save disk space by deleting from your working Applications disk the converter programs for the applications you don't use. Do *not* delete LWPRINT.EXE or LW.EXE. The converter programs are LWASC.EXE (for ASCII and Lotus spreadsheet files), LWMM.EXE (for MultiMate files), LWWS.EXE (for WordStar files), LW123.EXE (for Lotus 1-2-3 graph files), and LW630.EXE (for Diablo 630 files).

Important   Installing the PC LaserWriter Program on a floppy disk creates an AUTOEXEC.BAT file if the disk doesn't have one. If the file already exists, the single line A:\ATALK is added to the file.

Selecting and testing the LaserWriter

You'll use menus from the PC LaserWriter Program to select a LaserWriter and verify the installation.

1. Press Ctrl-Alt-Del to restart your PC. If your PC does not have a hard disk, use your new working Startup disk to start up the computer.

Make sure the LaserWriter is turned on, has paper in its paper tray, and is connected to the network. If the LaserWriter is not ready, you will receive error messages during the next steps.

2. If your PC has a hard disk, type `LW` and press Return.

   If your PC does not have a hard disk, insert your working Program disk into drive A, type `LW,` and press Return.

3. A menu appears. One of its choices is `Printer Utilities`. Use the Cursor Down or Cursor Up key to select (highlight) that choice. Press Return. A second menu appears.

4. Select the choice `Select Printer`. Press Return.

   A list of zones appears. A *zone* is a subnetwork of the AppleTalk network system. Select the zone you want. Press Return.

   If the list of zones is too long to fit on a single screen, press the PgDn or PgUp key to see additional zone names. Select the one you want and press Return.

   If your network is not divided into zones or does not have a name, the asterisk on the screen is the default name. The asterisk is already highlighted. Press Return.

   If you have questions about zones, see "Selecting a Printer" in Chapter 3.

5. As soon as you select a zone, the PC LaserWriter Program searches that zone for the names of all the LaserWriter printers attached to it. After a few moments, those names are listed on the screen.

   Select the name of the LaserWriter you want to use for printing your files. Press Return. The LaserWriter you selected will now receive and print the files you send from your PC.

   The Printer Utilities menu appears on the screen again.

6. To verify that the installation was successful, you now need to send a test page from your PC to the LaserWriter. Select `Print Test Page` from the menu. Press Return.

   After a few moments, a test page will emerge from the LaserWriter you selected.

   If the test page is not printed, refer to "Printing a Test Page" in Chapter 3 for troubleshooting advice.

7. You're now finished selecting a LaserWriter and verifying the installation. Press F3 to return to DOS.

From now on, the LaserWriter you selected will receive your files for printing.

Chapter 3

Using the LocalTalk PC Card

This chapter summarizes the basic steps for printing from a PC to a LaserWriter on an AppleTalk network system. You use these steps regardless of which application you used to create the files to be printed. Later chapters describe the options for specific applications.

Starting your PC

If you have the LocalTalk PC Card installed in a PC with floppy disk drives, use your working Startup disk (or your boot disk) to start your PC.

1. Insert the working Startup disk (or your boot disk) in drive A.

2. Turn on your PC. The driver program on the Startup disk (or your boot disk) is loaded into memory.

If you have a PC with a hard disk and have installed the PC LaserWriter Program as described in Chapter 2, the driver program will be loaded automatically each time you turn on or restart your computer.

In either case—hard disk or floppy disk drives—you do not have to reload the driver each time you want to print.

Starting the PC LaserWriter Program

The steps to start the PC LaserWriter Program depend on whether you have a PC with a hard disk or one that uses two floppy disk drives.

From two floppy disk drives

Assuming that you started your PC with the working Startup disk:

1. Exit from the program you have been using and return to DOS.

2. Remove the disk from drive A and insert your working Program disk.

3. Type LW and press Return. The Main menu of the PC LaserWriter Program appears.

4. Insert the data disk with the file you want to print in drive B. You're ready to print.

From a hard disk

1. Exit from the application you have been using and return to DOS.

2. Type LW and press Return. The PC LaserWriter Program loads and the Main menu appears. You're ready to print.

The menus

The PC LaserWriter Program works from a set of menus. The Main menu, shown in Figure 3-1, appears when you start the program.

If you need help while working with the program, press F1. A description of the menu currently in use will appear. If you need a quick reminder about the uses of the function keys, press F2. A brief explanation of each function key will appear.

```
                              MAIN MENU

  ▸  Print
     Printer Utilities
     Return to DOS




     Current Zone:        *
     Current Printer:     LaserWriter




     F1  -- Help               ↵          -- Select choice
     F3  -- Abort Program      ↑ ↓ → ←  -- Move Selection
     F4  -- Access DOS         Esc        -- Previous menu
```
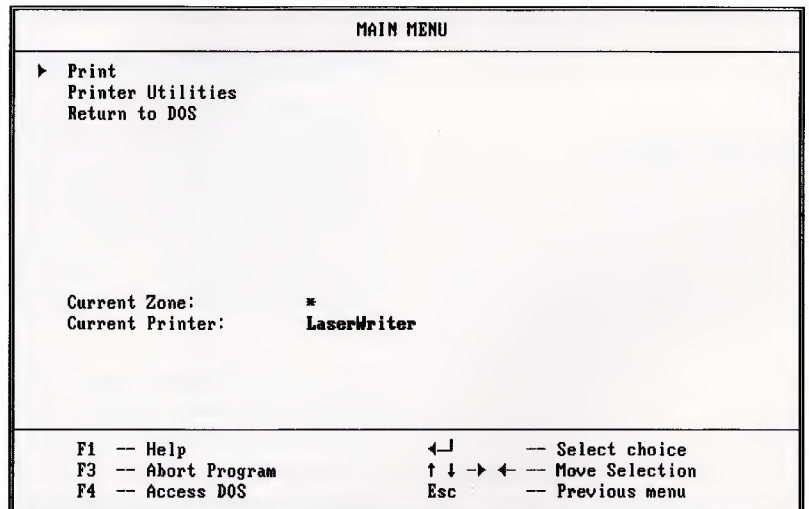
Figure 3-1
The Main menu offers three choices

Select the Main menu's `Print` option to display the types of files that can be printed.

The `Printer Utilities` option lets you select a LaserWriter for printing your files, rename a LaserWriter, or print a test page.

Selecting `Return to DOS` stops the PC LaserWriter Program and returns you to DOS.

The `Current Zone:` and `Current Printer:` names shown on the menu tell you which LaserWriter will print the files from your PC. You can change both the zone and the LaserWriter by using the `Printer Utilities` option.

A summary of function keys and cursor movements appears at the bottom of each menu. (See Figure 3-1.)

❖ *By the way:* If you don't want to use the menus, you can work directly from the DOS prompt. See Appendix B for instructions.

Selecting from the menus

▶

Selection indicator

You select items from a menu by moving the selection indicator (a small arrow) to the line where a desired option appears. The Cursor Up and Cursor Down keys move the indicator from line to line. The Home and End keys move the indicator to the top and bottom of the menu. If there is more than one option on a line, the current choice is highlighted. Pressing the Cursor Right or Cursor Left key highlights another option on that line. Figure 3-2 illustrates the process.

Some menu options require that you enter information, such as a filename. For those items, move the indicator to the appropriate line and begin typing. You can edit your entry by using the Backspace, Return, Insert, and Delete keys. The Return key deletes all text from the cursor to the end of the line.

```
                              WORDSTAR
 →  WordStar File Name:     |-                                         ⊢
    Print Option:           Print Save Print/Save
    Save As:

    Orientation:            Portrait Landscape
    Number Of Copies:       1
    Paper Feed:             Auto Manual
    Scale:                  1.00
    Character Set:          LaserWriter Intl 1 Intl 2 Printwheel
                            Special




    F1  -- Help                     F10      -- Print WordStar File
    F3  -- Abort Program            ↑ ↓ → ←  -- Move Selection
    F4  -- Access DOS               Esc      -- Previous menu
```

Selection indicator

Highlighted choices

Return key selects

Cursor keys move
selection indicator

Figure 3-2
The selection process

Printing a file

You follow a standard procedure for printing with the PC
LaserWriter Program, regardless of the type of file you want to print.
This procedure is summarized here, using the menu for printing a
WordStar file as an example. Chapters 4 through 9 include detailed
explanations of the options and any special attributes available for
printing each type of file the PC LaserWriter Program can handle.

Here are the steps for printing a file:

1. Make sure that the LaserWriter you want to use is turned on and has printed its sample page.

2. Load the PC LaserWriter Program by typing `LW` and then select `Print` from the Main menu. Press Return.

   A list of file types that can be printed appears.

3. Move the indicator to the type of file you want to print and press Return.

For this example, WordStar was selected. Figure 3-3 shows the menu of options for this type of file.

Type a filename and select the options you want for the printed version of the file.

```
┌─────────────────────────────────────────────────────────────────────────┐
│                               WORDSTAR                                    │
├─────────────────────────────────────────────────────────────────────────┤
│  ▶  WordStar File Name:       ┤-                                        ├ │
│     Print Option:             ▓Print▓ Save Print/Save                     │
│     Save As:                                                              │
│                                                                           │
│     Orientation:              ▓Portrait▓ Landscape                        │
│     Number Of Copies:         1                                           │
│     Paper Feed:               ▓Auto▓ Manual                               │
│     Scale:                    1.00                                        │
│     Character Set:            ▓LaserWriter▓ Intl 1 Intl 2 Printwheel       │
│                               Special                                      │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
├─────────────────────────────────────────────────────────────────────────┤
│     F1  -- Help              F10       -- Print WordStar File             │
│     F3  -- Abort Program     ↑ ↓ → ←  -- Move Selection                  │
│     F4  -- Access DOS        Esc       -- Previous menu                   │
└─────────────────────────────────────────────────────────────────────────┘
```

Figure 3-3
The WordStar menu

- ☐ `Wordstar File Name:` Type the name of the file to be printed. It must be the name of an actual file on the drive you designate. Press the Cursor Down key to move the selection indicator to the next line.

- ☐ `Print Option:` Select `Print` to only print the file, select `Save` to save it, or `Print/Save` to both print and save the file.

- ☐ `Save As:` Type a name for the PostScript version of the file if you selected either `Save` or `Print/Save`.

- ☐ `Orientation:` and all the following items: These are the printing attributes that vary according to the type of file to be printed.

  Use the Cursor Left and Cursor Right keys to highlight options on a line. Use the Cursor Up and Cursor Down keys to move the selection indicator. On lines where only one option appears, type a new choice if you want to make a change.

Naming a file to be printed

Depending on the file's location—on a floppy disk or a hard disk—you may need to include the file's complete pathname. For example, if the WordStar file letter.ws is on the disk in drive B, the filename to enter on the options menu is `B:letter.ws`.

If you're using a hard disk system, you'll probably store files in several directories. In that case, enter the file's full pathname.

For more information about directories and pathnames, consult your DOS manual.

Saving a file

The PC LaserWriter Program makes a copy of your file and converts it into a temporary PostScript file that is saved on the disk in the default drive. Then the file is sent to the LaserWriter. The temporary file's name is lwps.$$$ (which you'll see occasionally on the screen).

Unless you elect to save the temporary file, the PC LaserWriter Program erases it after printing. Typically you'll want to save the file if you plan to reprint it later.

To save the PostScript version of the file after printing, select `Print/Save` from the menu.

Select `Save` to save the file without printing it.

❖ *Note:* Whenever you save the PostScript version of a file, this will be a new file and will not replace the original version of the file you designated for printing.

If you elect to save the file, the program changes the name from lwps.$$$ to the new filename that you give it in the `Save As:` line. Be sure to specify a complete pathname when you save the file.

A few things to be careful about when saving a file:

□ Because the file is saved in PostScript format, and not in the format of the original application used to create it, make all editing changes before you save the file.

□ Do not give the saved file the same name or pathname as the original file. If you do, an error message will appear.

□ The PostScript version of a file may be up to five times larger than the original file and thus may take more disk space than you anticipate. Make sure the disk on which the file is to be saved has enough room for the larger file. This space requirement also applies to the temporary file that is created on the disk in your default drive before printing begins.

Selecting printing attributes

The remaining items on the WordStar menu differ somewhat for the various types of files you can print with the PC LaserWriter Program.

Most of these choices are self-explanatory, although the terms *Portrait* and *Landscape* may be new to you. Both terms refer to the orientation of the printed page; Portrait is the standard vertical orientation of a page, and Landscape is the horizontal orientation of the page. Figure 3-4 shows an example of each.

Portrait   Landscape
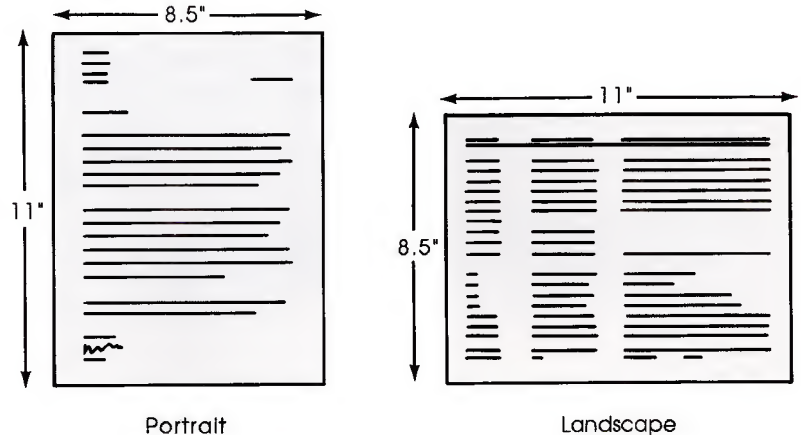
Figure 3-4
Portrait and Landscape page orientations

Because the LaserWriter is capable of printing many fonts, special characters, and image sizes, it provides more options than the standard formatting choices in most PC programs. The special printing attributes available for each of the file types are described in Chapters 4 through 9.

The print command

After you have named the file and selected the printing attributes you want, press F10 to send the file to the LaserWriter.

The LocalTalk PC Card and the PC LaserWriter Program take care of all AppleTalk communications and send the file (in PostScript form) to the LaserWriter, which prints the file with the options selected on the menu.

As the printing takes place, messages on the PC's screen inform you of the status of the LaserWriter.

Preparing the LaserWriter

When you installed the PC LaserWriter Program, you selected a specific printer and printed a test page to verify that the network connections were functioning properly. You have to select a LaserWriter only once. Your selection is saved and is shown on the menu.

If you add a LaserWriter to the network or decide to change printers at a later time, you can change your selection. You can also rename a LaserWriter.

You use the Printer Utilities menu (Figure 3-5) in the PC LaserWriter Program for each of these operations.

```
┌─────────────────────────────────────────────────────────────────┐
│                        PRINTER UTILITIES                          │
├─────────────────────────────────────────────────────────────────┤
│  ►  Select Printer                                                │
│     Rename Printer                                                │
│     Print Test Page                                               │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
├─────────────────────────────────────────────────────────────────┤
│  F1  -- Help              ◄┘         -- Select choice             │
│  F3  -- Abort Program     ↑ ↓ → ←   -- Move Selection             │
│  F4  -- Access DOS        Esc       -- Previous menu              │
└─────────────────────────────────────────────────────────────────┘
```
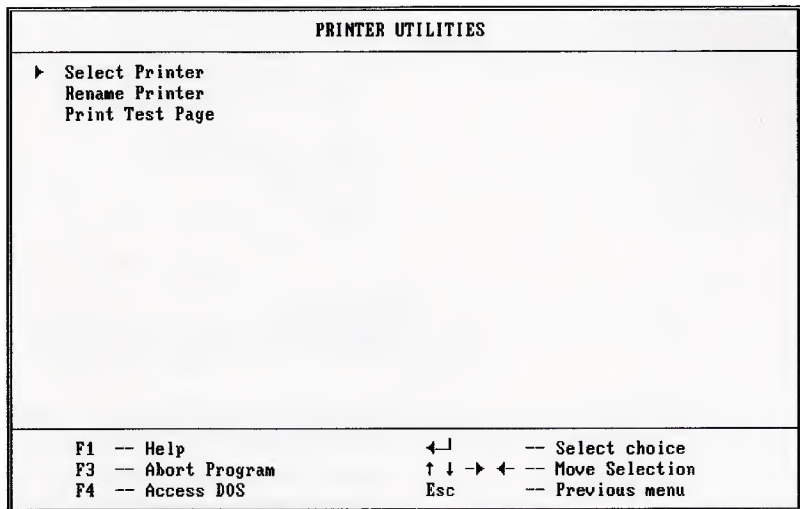
Figure 3-5
The Printer Utilities menu

Selecting a printer

You can select a LaserWriter at any time while you're working with the PC LaserWriter Program. If a Print menu is on the screen, press Esc twice to return to the Main menu. From there you can select the Printer Utilities menu, which contains the `Select Printer` choice.

To select a LaserWriter, you need to know its name and zone. A *zone* is a subnetwork of the AppleTalk network system. For instance, a company's network might be divided into four zones for the accounting, sales, personnel, and engineering departments. Each zone can have a number of LaserWriter printers attached to it. Zones are usually given a name when they are created. If a network has not been divided into zones or given a name, it is assigned an asterisk (*) as its default name.

Each LaserWriter in a zone has a name. Usually, a LaserWriter is given its name when it is first attached to a particular zone in the network. The default name for a LaserWriter not given a new name is *LaserWriter* or *LaserWriter Plus*.

Important	The LaserWriter you want to use must be turned on, and it must have printed its internal sample page before you can select it for use with the LocalTalk PC Card. If power to the printer is off or it has not printed the sample page, the PC LaserWriter Program will not recognize it.

Here are the steps to select a printer:

1. Select `Printer Utilities` from the Main menu and press Return. Select `Select Printer` and press Return. After a few moments, a list of zones on your network appears on the screen. If the network has not been divided into zones, the screen will show an asterisk in place of the zone names.

2. Select the zone that contains the LaserWriter you want and press Return.

   The PC LaserWriter Program now begins searching the zone for LaserWriters.

   Finding all the names may take a few seconds. A message tells you that the search is in progress. When the program finds all the LaserWriters on that zone, their names appear on the screen.

3. Select the LaserWriter to print your files and press Return.

Printing a test page

Sending a test page from your PC to the LaserWriter verifies that the system is working properly. Figure 3-6 shows a correct test page.

This is a test of the LocalTalk™ Network.....................

This is a test of the LocalTalk Network......................

LocalTalk

This test illustrates 8-pt., 12-pt., and 72-pt. printing on the LaserWriter® printer.
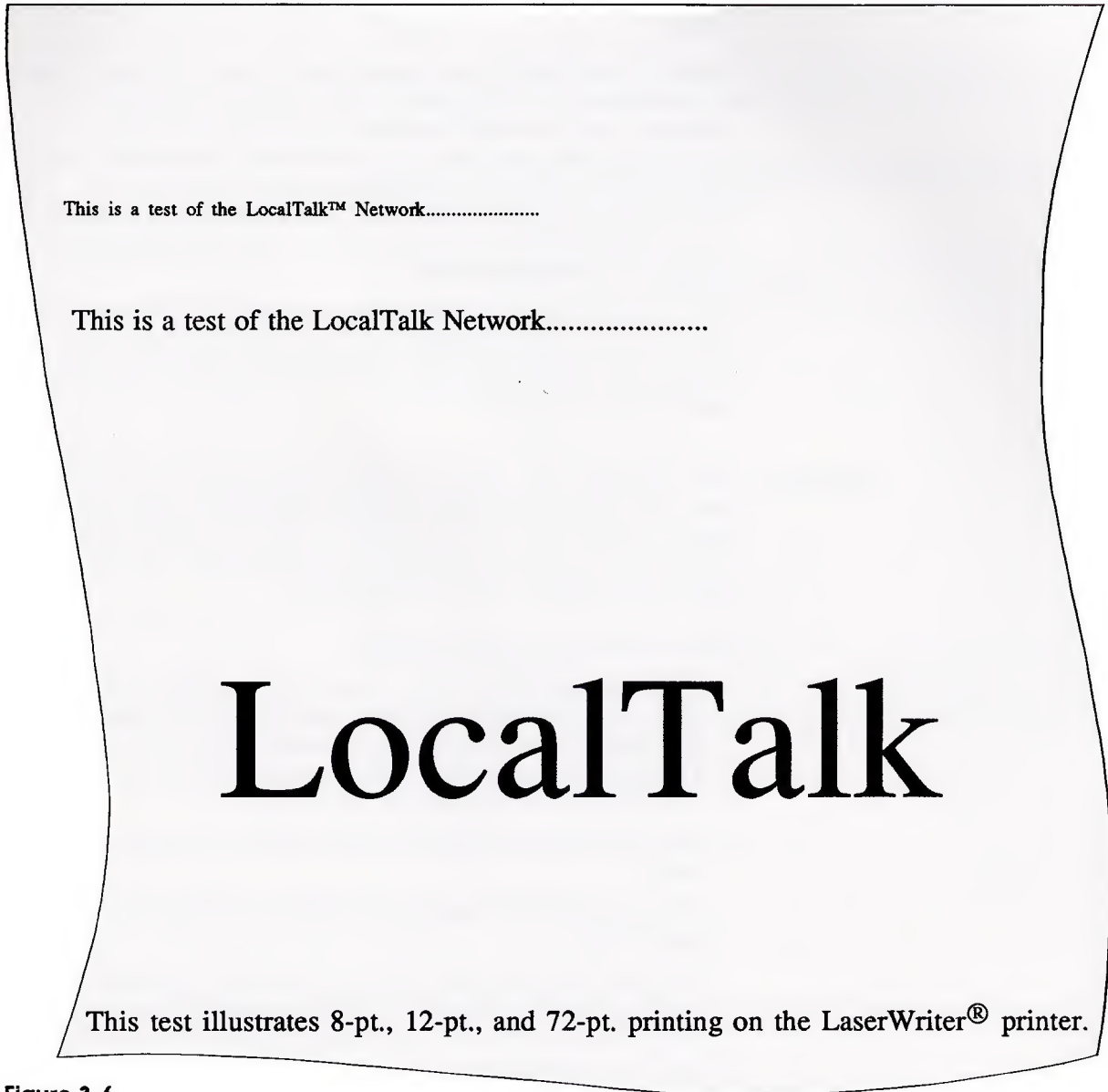
Figure 3-6
A correctly transmitted test page

To send a test page over the network to the LaserWriter:

1. Make sure that the LaserWriter is turned on and has printed its internal sample page (which is printed whenever you turn on the LaserWriter and is not the same as the test page).

2. Select Printer Utilities and press Return. A new menu appears.

3. Select Print Test Page from the menu and press Return. The test page will emerge from the LaserWriter in a few moments.

If the test page does not print or it is garbled, check the following:

□ The cables that attach your computer to the network. Tighten any that are loose.

□ The cables that attach the LaserWriter to the network.

□ The paper supply and paper path. (See the *LaserWriter and LaserWriter Plus* owner's guide for these operations.)

□ The printer's name. Someone may have changed its name and not informed you.

□ The LocalTalk cable system configuration. Someone may have added a new device to the network incorrectly. For instance, a connector box on the network may be only partially attached.

□ The LocalTalk PC Card installation, including both hardware and software. (If you've successfully printed before, this is probably not the problem.)

□ The settings on the card's DIP switches if you have other add-on boards in your computer. These settings are probably not the problem if you've printed successfully before, unless you've added a new board to your PC since you last printed. See the technical specifications for the LocalTalk PC Card in Appendix C for a description of the DIP switches' functions.

Renaming a printer

You should rarely, if ever, rename a printer. Changing the name of a LaserWriter means that each person on the network who wants to use that printer will have to reselect it with its new name.

In the event that you need to rename a LaserWriter, here are the steps to follow:

1. Select `Printer Utilities` from the Main menu and press Return.

2. Select `Rename Printer` from the new menu that appears and press Return. A warning message appears. At this point you can exit the renaming process if you're there by mistake.

3. Press the Esc key to stop the process and return to the Printer Utilities menu. Press F10 to continue with the process.

   If you press F10, the Rename menu appears.

4. Type a new name for the LaserWriter. It will appear next to `New Printer Name:` on the screen. Press F10. The LaserWriter now has the new name.

After renaming a printer, be sure to inform everyone who works on the network of the change.

Suspending or stopping the PC LaserWriter Program

When you're done printing, you typically want to stop the PC LaserWriter Program and return to DOS. In some instances, however, you may want to suspend operation of the program temporarily while you perform another task with the PC and then return to the program. You can stop or suspend the program either from the menus or with the PC's function keys.

Suspending program operation

Suspending the PC LaserWriter Program lets you return to DOS without actually leaving the program. This is especially useful if you want to print a file and can't recall its exact name. For example, you can simply suspend operation, give the directory command (DIR) to display a list of filenames, and then return to the PC LaserWriter Program.

Follow these steps to suspend and reinitiate the program's operation:

1. Press F4 to suspend the program's operation and return to DOS. A modified DOS prompt, LWDOS> will appear to indicate that the PC LaserWriter Program is still loaded.

2. Type the DOS command you want to use and wait while it is executed.

3. Press F4 again to return to the PC LaserWriter Program. You will see the same menu or message that was on the screen before you suspended operation.

   Typing q (for *quit*) and pressing Return is an alternate way to return to the program.

While the program is suspended and the LWDOS> prompt is displayed, you can use any DOS command except Prompt, Set, or Path. You should not install other memory-resident applications at the LWDOS> prompt. However, you can run regular programs.

Stopping the PC LaserWriter Program

You can stop the PC LaserWriter Program's operation in any of three ways. Two of these methods are standard menu choices; the other is a "quick-exit" keystroke to stop the program instantly.

To exit the PC LaserWriter Program normally:

☐ Press Esc until the DOS prompt appears.

Or:

☐ Select Return to DOS from the Main menu.

To exit the program instantly:

☐ Press F3.

Important	To interrupt the LaserWriter as it's printing, press Esc. If you press this key while the PC LaserWriter Program is in the process of converting a file to PostScript, the conversion is completed, then the program stops before sending the file to the LaserWriter.

Keystroke definitions

Table 3-1 identifies which function keys and other special keys work with the PC LaserWriter Program.

Table 3-1
PC LaserWriter Program keys

Keystroke	What it does
F1	Shows help text for the current screen display.
F2	Shows help text defining special keys.
F3	Stops the PC LaserWriter Program and returns to DOS.
F4	Suspends the PC LaserWriter Program and gives you access to DOS. Restarts the program when you're through using DOS.
F10	Prints the file named on the current Print menu.
Esc	Returns to the previous menu; stops the printing process.
Cursor Up or Cursor Down	Moves the selection indicator on the screen.
Cursor Left or Cursor Right	Moves the highlighting when there are choices; moves the cursor for editing.
Home	Moves the selection indicator to the top of the menu.
End	Moves the selection indicator to the bottom of the menu.
Return	Selects choices on menus; deletes text in fields to the right of the cursor.

Chapter 4

Printing
WordStar
Files

The PC LaserWriter Program can print WordStar files that you've already created or that you will create in the future. You can add many of the printing attributes of the LaserWriter to your WordStar file before it is printed. You choose the essential features, such as page orientation, scale of image, and character set, from the Print menu in the PC LaserWriter Program. In addition, you can put certain commands or control characters in the file to produce other printing enhancements.

You enter printing features for your WordStar document, then, in three ways:

☐ by selecting options from the PC LaserWriter menu for WordStar files

☐ by embedding control characters in the text

☐ by using WordStar's standard features

You can use all three of these methods together in one file. For example, you can embed control characters in the text to represent special formats, specify margins using WordStar commands, and then select the print options from the menu. The LaserWriter recognizes the various codes from each source.

See the *WordStar Reference Manual* if you have questions about WordStar standard features.

❖ *Note:* Names for files, paths, and directories on the WordStar menu follow the standard DOS and WordStar conventions.

Printing a WordStar file

You use WordStar to create and save a file as you normally would. Include embedded characters or other special print features in the text before you save it.

When you want to print a WordStar file with the LaserWriter, follow these steps:

1. Exit WordStar and return to DOS.

   For a floppy disk drive system, insert your working Applications disk in drive A, but leave the WordStar data disk in drive B.

2. Type LW and press Return. The Main menu appears.

3. Select `Print` from the Main menu and press Return. The Print menu appears.

4. Select `WordStar` and press Return. The WordStar menu, illustrated in Figure 4-1, appears.

```
┌──────────────────────────────────────────────────────────────────────┐
│                              WORDSTAR                                  │
├──────────────────────────────────────────────────────────────────────┤
│ ▶  WordStar File Name:     |-                                        ├ │
│    Print Option:           ▮Print▮ Save Print/Save                     │
│    Save As:                                                           │
│                                                                        │
│    Orientation:            ▮Portrait▮ Landscape                        │
│    Number Of Copies:       1                                          │
│    Paper Feed:             ▮Auto▮ Manual                               │
│    Scale:                  1.00                                       │
│    Character Set:          ▮LaserWriter▮ Intl 1 Intl 2 Printwheel      │
│                            Special                                    │
│                                                                        │
│                                                                        │
│                                                                        │
│                                                                        │
├──────────────────────────────────────────────────────────────────────┤
│    F1 -- Help                       F10      -- Print WordStar File     │
│    F3 -- Abort Program              ↑ ↓ -▶ ◀ -- Move Selection          │
│    F4 -- Access DOS                 Esc      -- Previous menu           │
└──────────────────────────────────────────────────────────────────────┘
```

Figure 4-1
The WordStar menu

You can select an item or enter information on each line of the WordStar menu.

□ In the `WordStar File Name:` field, enter the full pathname of the file that you want to print.

For example, if the file Tahiti.ws is stored on a disk in drive B, enter `B:Tahiti.ws`. Or, if the root directory on drive C is the current one and the file is in the directory Vacation, type `C:\Vacation\Tahiti.ws`.

□ For the `Print Option:` you select one of three choices: `Print`, `Save`, or `Print/Save`.

If you select `Print`, the file will be printed but the temporary PostScript version of the file will not be saved.

With the `Save` option, the file will not be printed but the PostScript version will be saved under the filename you type on the `Save As:` line of the menu.

Generally, you'll use the Save option if you want to edit the PostScript file or print it later on.

The Print/Save choice causes the file to be printed and the PostScript version to be saved. The file is saved under the filename you type on the Save As: menu line.

☐ At the Save As: menu line, you type the filename to save the PostScript version of the file. Do not use the same filename that the original WordStar file uses. If you do, an error message appears.

WordStar print options

The remaining items on the WordStar menu offer a set of print options.

☐ The Orientation: selection is either Portrait or Landscape. Selecting Portrait causes the LaserWriter to print the page vertically (the normal orientation for text pages), while selecting Landscape causes it to print horizontally (the usual orientation for spreadsheets or ledgers). Select Landscape to print wide tables or graphs.

☐ At the Number Of Copies: line, enter a number from 1 to 100.

☐ At the Paper Feed: line, Auto feed is the normal LaserWriter mode. Select the Manual mode when you have to feed in special paper, such as envelopes or transparencies for slides.

☐ The Scale: choice lets you enlarge or reduce the images being printed. Scale is similar to the reduction feature on a copy machine. A scale of 1.00 prints text at 12-point size, while a scale of 0.85 reduces text to 85 percent of that size. A scale of 1.10 enlarges the image to 110 percent of its original size. A scale that is too large—for example, 1000—might overrun the memory of the LaserWriter.

☐ The Character Set: choices determine the types of characters that you can print. LaserWriter represents the standard set of characters that is normally available from the LaserWriter. The other options let you print from extended characters sets, such as the international character set that contains the German umlaut. See Appendix A for instructions to print from the extended character sets.

The print command

After selecting all of the printing options on the menu, press F10 to send the file to the LaserWriter.

Important The LaserWriter must be turned on to print. If it is turned off, the PC LaserWriter Program will convert the file to PostScript, but will then display an error message when attempting to print.

During a brief pause, the PC LaserWriter Program converts the file to PostScript format. The LaserWriter status screen then replaces the WordStar menu. Status messages inform you of the progress of the printing. When the printing is complete, press any key and the WordStar menu returns.

❖ *Note:* You can bypass the menu and operate the PC LaserWriter Program directly from DOS. See Appendix B for instructions.

Special WordStar printing features

You can embed certain PC LaserWriter Program codes in a file when editing it with WordStar. These codes are similar to the dot commands and control characters already available in WordStar, but they activate additional printing features.

For example, the PC LaserWriter dot command `./char 10 20` embedded in a WordStar file sets the point size for two alternate fonts to 10 and 20 points. The LaserWriter will then print the fonts in those sizes.

Important Some of the PC LaserWriter Program codes replace your normal WordStar commands. Table 4-1 at the end of this chapter shows which PC LaserWriter codes replace WordStar commands. When preparing your file for LaserWriter printing, use the codes for the PC LaserWriter Program.

You can nest the codes in your WordStar text. For example, the PC LaserWriter code ^PY (Ctrl-P Y) selects the Helvetica® font for printing, and the WordStar code of ^PB boldfaces the text. Nesting them together as ^PB^PY will produce boldface Helvetica.

So, if you type

```
Nesting applies ^PB^PYto all^PB^PY the control codes.
```

the LaserWriter prints the sentence as

```
Nesting applies to all the control codes.
```

❖ *Note:* The symbol ^ represents the control key. Thus, ^PY means to simultaneously press the Ctrl and P keys and then the Y key. Do not type the ^ (caret) symbol; it is not a substitute for the Ctrl key. Also note that on the screen ^PY and ^PB appear as ^Y and ^B. The P is not displayed, but you still must type it as part of the code.

Like WordStar's printing control codes, the PC LaserWriter Program's codes are toggles; that is, a code turns on a feature until the same code appears again to turn it off.

Be sure to put the second ^PB^PY in the text to turn off the boldface Helvetica. If you forget, the LaserWriter will print the rest of the text in that type font.

Formatting the page

Page formatting features for WordStar files are

☐ margins and page layout

☐ justifying and centering text

☐ headers and footers

Margins and page layout

The default values for margins and page layout are as follows:

Margins (left, right, top, and bottom)	1	inch
Page height	11	inches
Page width	8.5	inches
Page offset (from left margin)	0	inches

You can reset any of these values with the `./page` command. The form of the `./page` command is

`./page` *<left margin> <right margin> <top margin> <bottom margin> <page height> <page width> <page offset>*

Substitute numbers for the bracketed items. The numbers are the values, in inches, for each of the format features. For example, to set the margins at 1.5 inches for the left margin, 0.5 inch for the right margin, and 2 inches for both the top and bottom margins, type

`./page 1.5 0.5 2.0 2.0`

Page height and page width refer to the dimensions of the paper in the LaserWriter. Page offset specifies the number of inches from the left edge of the page to the first printed character. That offset amount is added to your left margin.

Although the `./page` command can be placed anywhere in the text, it is usually on the first line of the first page so that the entire file has the same layout values.

❖ *Note:* If you will be printing your WordStar files only on the LaserWriter from now on, change the default values in your WordStar program for Number of lines/page or Bottom page margin. Set Number of lines/page to 54 or Bottom page margin to 9.

Justifying and centering text

The default text is flush left and ragged right. Here are the control codes to justify or center the text:

☐ `^PQ` centers text between left and right margins.

☐ `^PR` justifies text flush right and flush left at the right and left margins, respectively.

☐ `^PQ^PR` causes text to be flush at the right margin and ragged at the left margin.

☐ `^PK` causes text to be flush at the right margin on odd-numbered pages and flush at the left margin on even-numbered pages. This command cancels other justification or centering until you enter `^PK` to turn off this feature.

Headers and footers

The commands to set header and footer margins are `.hm` (header margin) and `.fm` (footer margin). Although these are the same commands that you use in WordStar to set the margins, there is one significant difference: in WordStar, you set the margins as number of lines; but for the PC LaserWriter Program, you set the margins in inches.

For example, typing `.hm 0.5` starts the first header line at 0.5 inch from the top of the page. Similarly, typing `.fm 1.0` starts the footer 1 inch from the bottom of the page.

As with other formatting codes, you usually enter these commands at the top of the first page of the file so that the header and footer margins will be consistent throughout the text.

Header and footer text information is entered with the standard WordStar `.he` and `.fo` commands.

Selecting fonts and styles

The default font for printing with the PC LaserWriter Program is Courier. `This sentence is printed in Courier.`

Here are the commands to change fonts:

`^PY`	Selects Helvetica.
`^PW`	Selects Times.
`^PY^PW^PB`	Selects a Symbol font that contains special characters such as αβχδεφγ. (See Appendix A for a list of characters in the Symbol font.)
`^PD`	Selects italics or oblique.
`^PB^PD`	Selects bold italics or bold oblique.

To change fonts in a WordStar file, enter the appropriate command at the beginning and at the end of the text to be printed in the new font. For example, if you type the sentence

`You can change the Courier font to ^PYHelvetica^PY and back again.`

the LaserWriter will print it like this:

`You can change the Courier font to `**`Helvetica`**` and back again.`

The `^PD` and `^PB^PD` commands apply to all fonts. For example, the nested commands `^PY^PB^PD` select **bold oblique Helvetica.**

❖ *Note:* Changing fonts automatically turns off boldfacing, italics, bold italics, oblique, and bold oblique. Thus, if you turn on boldfacing or one of the other special features, you can omit the turn-off code when you change to another font.

Changing point size and line spacing

Two font sizes—normal and alternate—are always available for your text. Here are the default point sizes:

Normal	12 points
Alternate	16 points

The command `^PN` selects the normal point size, and the command `^PA` selects the alternate point size. For example, if you type the sentence

```
Get set for a really ^PABIG^PN show.
```

the LaserWriter will print it like this:

```
Get set for a really BIG show.
```

Note that with `^PA` and `^PN` commands, you don't need to turn off the feature. Instead, if you enter one setting, it automatically turns off the other.

Changing the default point size

To change the settings for `^PA` and `^PN`, use the `./char` command. Its form is

`./char` *<alternate character size> <normal size> <superscript/subscript size>*

Substitute numbers for the bracketed items. The numbers are the values, in points, for the new settings.

For example, to change the point size of the alternate setting to 20, the normal setting to 16, and the size of any subscripted or superscripted text to 12, enter

```
./char 20 16 12
```

Now when you enter ^PA in the text, it turns on the 20-point size of the font, and ^PN turns on a 16-point font.

The superscript and subscript point size stays the same for both the normal and the alternate point sizes. You indicate superscript and subscript text with the standard WordStar commands ^PT and ^PV, respectively.

Enter the ./char command on a separate line where you want to change the point sizes. The extra line will not be printed. If the point size is too large for the current line spacing, change the spacing with the ./line command.

Changing the line spacing

The default line spacings for the normal and alternate point size selections are

Normal space_____
between lines__12 points_____

Alternate space_____
between lines__16 points_____

The ./line command changes the line spacing. Its form is

./line *<alternate line points> <normal line points>*

Substitute numbers for the bracketed items. The numbers are the values, in points, of the new settings.

For example, to change the alternate line spacing to 10 points and the normal spacing to 12 points, enter

```
./line 10 12
```

Enter the ./line command in the text where you want the new settings to take effect. Note, however, that the change applies only to the currently affected font family. For instance, if you're writing in Times and change the line spacing, all the instances of Times in the file will have the new spacing. If you then shift to Helvetica, the line spacing reverts to its previous values. You must enter another ./line command for the new font.

The ./line command lets you set line spacing for each font without affecting the others in your text.

Tabs and tables

If your WordStar file contains tabs—in tables, for example—you may need to set tab spacing to create the proper layout for LaserWriter printing. The way to set up tabs depends on whether the font that you're using is fixed pitch (letters all the same size) like Courier or proportional like Times.

Fixed-pitch spacing

The default setting for fixed-pitch tabs is 5 spaces.

Here are the steps to enter tabbed data:

1. Make sure that WordStar's variable tabbing feature is turned on (see a description of the ^OV command in the *WordStar Reference Manual*).

2. Enter the tabular data so it appears on the screen in the way that you want it printed. Fixed-pitch tabbing means that "what you see is what you get."

❖ *Note:* Control codes, such as ^PB, can make your screen data look out of alignment, but it isn't. Pretend the codes aren't there.

For example, if your screen looks like this:

```
^PBSales     1984        1985        1986^PB
NW           150         160         250
SE           200         210         210
MW           350         370         420
Far West     550         590         660
```

the table would look like this after printing:

```
Sales      1984      1985      1986
NW         150       160       250
SE         200       210       210
MW         350       370       420
Far West   550       590       660
```

Proportional spacing

The default setting for proportional font tabs is 0.5 inch.

Here are the steps to enter tabbed data:

1. Turn off the WordStar variable tabbing feature by typing ^OV in the text.

2. Make sure that flush left option is on (^OJ turns it on and off).

3. Enter the data. It will not be "what you see is what you get" because characters on the screen each take the same amount of space, but the same characters printed in a proportional font take variable amounts of space. The result is that what appears to be misaligned on the screen is aligned on the printed page.

Changing tab settings

The ./tab command changes the tab settings for both fixed-pitch and proportional fonts. The form is

./tab <*tabs in inches*>

Substitute a series of numbers for <*tabs in inches*>. The numbers are the values, in inches, for each successive tab stop left to right across the screen.

For example, to set tabs at 1.0, 1.5, 2.0, and 3.0 inches from the left margin, type

./tab 1.0 1.5 2.0 3.0

Enter the ./tab command on a separate line where you want the new tab settings to begin in your text.

Adding a Lotus 1-2-3 graph to your text

Two PC LaserWriter Program commands, `./lotus` and `./text`, are specifically for integrating Lotus 1-2-3 graphs into your WordStar files. Here are the steps to add a graph to a WordStar file:

1. Create and save the graph using 1-2-3.

2. Exit 1-2-3 and load WordStar. Move to the place in the WordStar file where you want to add the graph.

3. Type `./lotus` *<graph filename>* on a separate line. Substitute the name you gave to the 1-2-3 file for *<graphfilename>*. The filename must be the one with the .pic extension. Be sure to include the path of the file.

4. Type `./text` on the next line. This command tells the LaserWriter to resume printing text.

5. Save the WordStar file as you normally would.

6. Exit WordStar and start the PC LaserWriter Program. On the print menu for WordStar, enter the WordStar filename, then press F10. The WordStar file is printed with the 1-2-3 graph in it.

If your 1-2-3 file is named sales86.pic, here's what it would look like on the screen in your WordStar document:

```
The following graph shows our results for 1986.

./lotus B:\sales86.pic

./text

Keep up the good work.
```

A summary of WordStar special features

Table 4-1 summarizes the WordStar special features.

Table 4-1
WordStar special features

Code	PC LaserWriter Program feature	Replaces the WordStar feature
^PY	Turns Helvetica on or off.	Selects ribbon color.
^PW	Turns Times on or off.	User patch.
^PY^PW^PB	Turns Symbol font on or off.	None.
^PD	Selects italics or oblique.	Selects double striking.
^PB^PD	Boldfaces italics or oblique.	None.
^PE	Turns non-ASCII character set on or off.	User patch.
^PA	Turns on alternate point size.	Selects alternate character pitch.
^PN	Turns on normal point size.	Selects normal character pitch.
^PQ	Centers text.	User patch.
^PR	Flushes right and left.	User patch.
^PQ^PR	Flushes right.	None.
^PK	Alternates flush right and flush left on odd- and even-numbered pages.	Alternates headers and footers.
.hm	Sets header margins in inches.	Sets header margins in lines.
.fm	Sets footer margins in inches.	Sets footer margins in lines.
./char	Sets point sizes for alternate, normal, and superscript and subscript characters.	None.
./line	Sets line spacing in points for alternate and normal type.	None.
./tab	Sets tab stops in inches.	None.
./lotus	Adds Lotus 1-2-3 graph to WordStar file.	None.
./text	Restarts text after Lotus 1-2-3 graph.	None.

Other standard WordStar features (see *WordStar Reference Manual*)

^PB	Boldfaces.
^PS	Underlines.
^PT	Superscripts.
^PV	Subscripts.
^PX	Strikes through.
.op	Omits page number.
.pn	Prints page number.
.he	Header text.
.fo	Footer text.
.pa	Page break.
.cp	Conditional page.

Advanced features (see Appendix E)

./cmd	Indicates PostScript commands.
./file	Indicates PostScript file.

Troubleshooting

Here are some typical problems that you may have, their possible causes, and what to do about them.

Pages are blank or have only a single line of text.

Cause: The page length, the number of lines per page, and the size of type are not properly coordinated; or a Lotus 1-2-3 graph that you've added to the WordStar file extends below the bottom margin.

Solution: Set the page length at 54 lines per page instead of the normal 55 lines, or change the bottom margin to 9.

Justified text is spread too wide.

Cause: Mixing a proportional font and a fixed-pitch font on the same line; or having oversize type and small type on the same line. The PC LaserWriter Program expands the text to fit between a line's margins.

Solution: Edit the text with WordStar to delete the extra spaces; reduce the point size of the larger type; make the right margin larger.

Columns that were created with tabs are not aligned.

Cause: The font for the table is proportional. (The LaserWriter condenses consecutive spaces to one space.)

Solution: Change tab settings with the `./tab` command; or reprint the table in a fixed-pitch font, such as Courier.

Fonts or special features, such as boldfacing, do not appear where you expect them.

Cause: You changed fonts and did not reenter the codes for the other special features. Remember that font changes automatically turn off boldfacing and other special character features.

Solution: Insert the code to turn off the font.

Type size or line spacing does not appear as expected.

Cause: The `./char` and `./line` commands that change point size and line spacing apply only to the current font, and not to the entire document.

Solution: Insert `./char` and `./line` commands for each font when it occurs in the document.

Headers or footers are not where you expect them.

Cause: The PC LaserWriter Program's `.hm` and `.fm` commands measure in inches, not lines (as the similar commands in WordStar do).

Solution: Reset the margins, measuring them in inches.

Text is jumbled together.

Cause: There are too many capital letters on a line of text printed in a proportional font.

Solution: Turn off any text justification and use the Return key instead of the text wrapping feature to type new lines.

Chapter 5

Printing
MultiMate
Files

The PC LaserWriter Program can print **MultiMate** files that you've already created or that you will create in the future. You can add many LaserWriter printing attributes to your **MultiMate** file before it is printed. You choose the essential features, such as page orientation, size of image, and character set, from the Print menu in the PC LaserWriter Program. In addition, you can put certain commands or control characters in the file to produce other printing enhancements.

You enter printing features for your MultiMate document in three ways:

□ by selecting features from the PC LaserWriter menu for **MultiMate** files

□ by embedding control characters in the text

□ by using MultiMate's standard features

You can use all three of these methods together in one MultiMate file. For example, you can embed control characters in the text to represent special formats, specify margins with MultiMate, and then select the print options from the PC LaserWriter Program menu. The LaserWriter recognizes various codes from each source.

See the *MultiMate Reference Manual* if you have questions about MultiMate's standard features.

❖ *Note:* Names for files, paths, and directories on the MultiMate menu follow the standard DOS and MultiMate conventions.

Important The PC LaserWriter Program does not support the MultiMate merge function or the special printing format of snaked or bound columns. If you want to print merged files, merge them into one file before you use them with the PC LaserWriter Program. You can then print that single file. If you want to print snaked or bound columns, print the columns in one column format and then rearrange them individually.

Preparing a MultiMate file for printing

Before using the PC LaserWriter Program, you create the file and, while still in MultiMate, select options from the Print Document Utility screen. Table 5-1 shows the settings for the MultiMate Print Parameters for Document screen that will make the file print properly on the LaserWriter.

Two selections on the screen that are essential for printing with the LaserWriter are F(ile) and Device Number. You must print the document to a F(ile), and you should set Device Number to a value for the right margin for the first format line in your document. The right margin is measured as the distance from the *left* edge of the paper in tenths of an inch. If you don't set the right margin, the default value for it is 7.5 inches.

The Device Number field is not normally used to set a right margin. However, MultiMate does not have a command for that setting. This causes a problem when you use a LaserWriter proportional font, such as Times or Helvetica, because MultiMate sets its lines according to the number of characters per line and, without a right margin setting, cannot tell when the line ends. To solve the problem, the PC LaserWriter Program redefines the Device Number field as a right margin setting.

To determine the proper setting for the Device Number, add the width of the document's text area and the width of the left margin. For example, on an 8.5-inch wide page, if your document has a 1-inch left margin, a format size of 65 characters, and a print pitch of 4 (or 10 characters per inch), the text area will be 6.5 inches. Adding the 1-inch left margin to the 6.5-inch text area yields a Device Number setting of 7.5 inches. Device Number is specified in tenths of an inch, so you would enter 075 in the Device Number field.

The 075 is a typical setting for an 8.5-inch page. For an 8.5- by 11-inch page printed in Landscape mode (horizontally), the Device Number setting will usually be 100; and for an 8.5- by 14-inch page printed in Landscape mode, the setting will usually be 120. You can, however, enter other right margin values in the Device Number field.

Table 5-1
Settings for the MultiMate Print Parameters for Document screen

Screen option	Selection	Description
Start Print at Page Number	001	Does not affect the LaserWriter, but a setting of 001 speeds up the process to print to a F(ile).
Stop Print at Page Number	001	Same as Start Print at Page Number.
Left Margin	Variable	Sets the margin in number of characters per inch. If pitch is set to 4 (10 CPI), a setting of 010 equals 1 inch. If pitch is set to 5 (12 CPI), a setting of 012 equals 1 inch.
Top Margin	Variable	Sets margin in lines per inch. If Lines Per Inch is set at 6, a setting of 006 equals 1 inch. If Lines Per Inch is set at 8, a setting of 008 equals 1 inch.
Pause Between Pages	N	LaserWriter will print continuously.
Draft Print [N or Y]	N or Y	If the LaserWriter font is set to Courier, this setting has no effect. If the font is set to a proportional font, Y selects the Helvetica on the LaserWriter and N selects Times. (You set fonts on the MultiMate Print Parameters for Document screen.)
Default Pitch [4 = 10 CPI]	1 through 9	The LaserWriter accepts the standard MultiMate pitch settings.
Printer Action Table	Any listed	Choice of table does not affect the LaserWriter.
Lines Per Inch (6 or 8)	6 or 8	For pitch settings 1 through 5, select 6. For pitch settings 6 through 9, select 8.
Justification [N or Y or M(icro)]	Y or N	The LaserWriter does not support M(icro).

Table 5-1 (continued)
Settings for the MultiMate Print Parameters for Document screen

Screen option	Selection	Description
Proportional Spacing [N or Y]	N or Y	N selects Courier; Y selects Helvetica or Times.
Char Translate/Width Table	None	Not used.
Header/Footer First Page Number	Any	The LaserWriter accepts the standard MultiMate settings.
Number of Original Copies	001	The PC LaserWriter Program has its own setting for number of copies.
Document Page Length	066,088, 084,112	Select the proper page length from the following list:
Sheet Feeder Action Table	None	Not used.
First Page Middle Last Page	None	Not used.
P(arallel)/S(erial)/L(ist)/A(uxiliary)/F(ile)	F(ile)	Only F(ile) will prepare the document for printing on the LaserWriter.
Device Number	075,100, 120	Enter 075 for 8.5- by 11-inch pages printed in Portrait mode (vertically). Enter 100 for 8.5- by 11-inch pages printed in Landscape mode (horizontally). Enter 120 for 8.5- by 14-inch pages printed in Landscape mode. You can also enter other settings for Device Number. For LaserWriter printing, Device Number sets the right margin in tenths of inches measured from the page's left edge.

The list referenced under Document Page Length:

Paper length	Lines per inch	Setting
11	6	066
11	8	088
14	6	084
14	8	112

When you're finished making selections on the Print Parameters for Document screen, press F10. **MultiMate** will print your file to the specified disk and will create a copy of the original file. The copy will have the same filename as the original, but will have a .prn extension. Printing the file to a disk adds special header information to the original file that lets the LaserWriter print it. The header information will not be printed.

Important   Do not use the MultiMate file with the .prn extension to its name. Use the original file to print with the LaserWriter. You can erase the .prn copy of the file.

After MultiMate has printed your document to a file, you're ready to use the PC LaserWriter Program to print the original file on the LaserWriter.
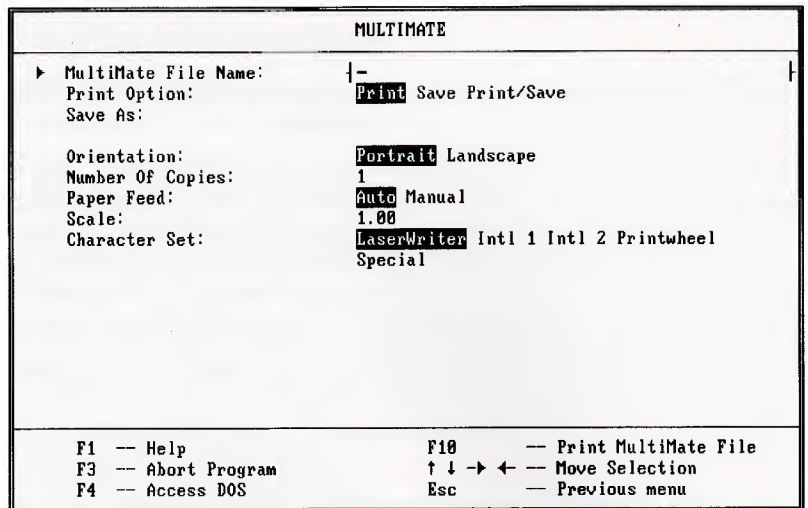
Printing a MultiMate file

You use MultiMate to create and save a file as you normally would. Include embedded characters or other special print features in the text before you save it.

When you want to print a MultiMate file with the LaserWriter, follow these steps:

1. Exit MultiMate and return to DOS.

   For a floppy disk drive system, insert your working Applications disk in drive A, but leave the MultiMate data disk in drive B.

2. Type `LW` and press Return. The Main menu appears.

3. Select `Print` from the Main menu and press Return. The Print menu appears.

4. Select `MultiMate` and press Return. The MultiMate menu, illustrated in Figure 5-1, appears.

```
                        MULTIMATE

  ▶  MultiMate File Name:    |-
     Print Option:           Print Save Print/Save
     Save As:

     Orientation:            Portrait Landscape
     Number Of Copies:       1
     Paper Feed:             Auto Manual
     Scale:                  1.00
     Character Set:          LaserWriter Intl 1 Intl 2 Printwheel
                             Special




     F1  -- Help             F10       -- Print MultiMate File
     F3  -- Abort Program    ↑ ↓ → ←   -- Move Selection
     F4  -- Access DOS       Esc       -- Previous menu
```

Figure 5-1
The MultiMate menu

You can select an item or enter information on each line of the
MultiMate menu.

□ In the MultiMate File Name: field, enter the full pathname
   of the file that you want to print.

   For example, if the file Tahiti.doc is stored on a disk in drive B,
   enter B:Tahiti.doc. Or, if the root directory on drive C is the
   current one and the file is in the directory Vacation, type
   C:\Vacation\Tahiti.doc.

□ For Print Option: you select one of three choices: Print,
   Save, or Print/Save.

   If you select Print, the file will be printed but the temporary
   PostScript version of the file will not be saved.

   With the Save option, the file will not be printed but the
   PostScript version will be saved under the filename you type on
   the Save As: line of the menu.

   Generally, you'll use the Save option if you want to edit the
   PostScript file.

   The Print/Save choice causes the file to be printed and the
   PostScript version to be saved. The file is saved under the
   filename you type on the Save As: menu line.

□ At the Save As: menu line, you type the filename to save the
   PostScript version of the file. Do not use the same filename that
   the original MultiMate file uses. If you do, an error message
   appears.

MultiMate print options

The remaining items on the MultiMate menu offer a set of print options.

☐ The `Orientation:` selection is either `Portrait` or `Landscape`. Choosing `Portrait` causes the LaserWriter to print the page vertically (the normal orientation for text pages), while choosing `Landscape` causes it to print horizontally (the usual orientation for spreadsheets or ledgers). Select `Landscape` to print wide tables or graphs.

☐ At the `Number Of Copies:` line, enter a number from 1 to 100.

☐ At the `Paper Feed:` line, `Auto` feed is the normal LaserWriter mode. Select the `Manual` mode when you have to feed in special paper, such as envelopes or transparencies for slides.

☐ The `Scale:` choice lets you enlarge or reduce the images being printed. Scale is similar to the reduction feature on a copy machine. A scale of 1.00 prints text at 12-point size, while a scale of 0.85 reduces text to 85 percent of that size. A scale of 1.10 enlarges the image to 110 percent of its original size. A scale that is too large—for example, 1000—might overrun the memory of the LaserWriter.

☐ The `Character Set:` choices determine the types of characters that you can print. `LaserWriter` represents the standard set of characters that is normally available from the LaserWriter. The other options let you print from extended character sets, such as the international character set that contains the German umlaut. See Appendix A for instructions to print from the extended character sets.

The print command

After selecting all of the printing options on the menu, press F10 to send the file to the LaserWriter.

Important The LaserWriter must be turned on to print. If it is turned off, the PC LaserWriter Program will convert the file to PostScript, but will then display an error message when attempting to print.

During a brief pause, the PC LaserWriter Program converts the file to PostScript format. The LaserWriter status screen then replaces the MultiMate menu. Status messages inform you of the progress of the printing. When the printing is complete, press any key and the MultiMate menu returns.

❖ *Note:* You can bypass the menu and operate the PC LaserWriter Program directly from DOS. See Appendix B for instructions.

Special MultiMate printing features

You can embed certain PC LaserWriter Program codes in a file when editing it with MultiMate. These codes are similar to the Alt key codes that you use in MultiMate, but they activate additional printing features.

Important Some of the PC LaserWriter Program codes replace your normal MultiMate commands. Table 5-2 at the end of this chapter shows which PC LaserWriter codes replace MultiMate commands. When preparing your file for LaserWriter printing, use the codes for the PC LaserWriter Program.

Selecting fonts and styles

The default font for printing with the PC LaserWriter is Courier.
`This sentence is printed in Courier.`

You select fonts for your document from the MultiMate Print Parameters for Document screen. You then use the two Alt codes, Alt D and Alt N, to change fonts within the text of your document. Alt D selects the default font, and Alt N selects the enhanced, or alternate, font. Note that any of the fonts can be the default.

❖ *A reminder:* Alt stands for the Alt key, not the letters *A, L,* and *T.* Thus, Alt D means press the Alt key and the D key simultaneously. The Alt key and letter key will not appear on the printed document.

You select fonts from the MultiMate Print Parameters for Document screen by following these steps:

1. Move the cursor to the `Proportional Spacing` field.

2. To select Courier, type `N`. To select either Helvetica or Times, type `Y`.

   If you typed `N`, Courier is the default font, and it is the only font available.

   If you typed `Y`, you can print in Times and Helvetica, but you now have to define which will be the default font and which will be the enhanced font.

3. Move the cursor to the `Draft Print` field.

   Type `N` to define Times as the default font and Helvetica as the enhanced font.

   Type `Y` to define Helvetica as the default font and Times as the enhanced font.

   Now you can use Alt D or Alt N in your text to select either Times or Helvetica. Embed the codes where you want the font changes to occur.

❖ *Note:* Changing fonts automatically turns off boldfacing, italics, bold italics, oblique, and bold oblique. Thus, if you turn on boldfacing or one of the other special features, you can omit the turn-off code when you change to another font.

Formatting characters

Two special PC LaserWriter Program codes let you change your text to print in italics or bold italics. Alt X changes text to italics, and Alt X Alt Z changes text to bold italics. Embed the codes in the text where you want the changes to occur.

For example, if you type the sentence

```
Putting text in AltXitalicsAltX or AltXAltZboldface
italicsAltXAltZ can draw attention to certain words.
```

when printed, it will look like this:

```
Putting text in italics or boldface italics can draw
attention to certain words.
```

Adding a Lotus 1-2-3 graph to your text

You use the PC LaserWriter Program commands ./lotus and ./text to add a Lotus 1-2-3 graph to your MultiMate file.

The form for the ./lotus command is

./lotus *<graph filename> <chart width> <offset from left margin>*

Substitute the appropriate information for the bracketed items. Graph filename is the name of the Lotus 1-2-3 graph you want to add to the MultiMate file. Chart width specifies the width that you want the 1-2-3 graph to be in the document. Offset from the left margin determines where the left edge of the graph is located. Both chart width and offset are measured in inches. Offset is measured from the left margin.

For example, the command

```
./lotus B:/Sales.pic 3.5 1.5
```

will make the LaserWriter print the graph named Sales.pic 3.5 inches wide and 1.5 inches from the left margin.

You do not have to specify the graph width and offset. If you don't specify them, the graph will be printed centered between the document's right and left margins and will begin at one line below the previous line of text in the document.

The `./text` command tells the LaserWriter to resume printing the MultiMate document after the graph.

Here are the steps to add a 1-2-3 graph to your MultiMate document:

1. Using 1-2-3, create and save the graph as you normally would.

2. Exit 1-2-3 and start MultiMate. Move to the place in the MultiMate file where you want to add the graph. The cursor must be at the left margin.

3. Type the `./lotus` command at the left margin. Enter the graph filename and be sure to include the pathname. Enter the graph width and offset if you want to specify them. Press Return.

   Press Return repeatedly to create enough blank space within the text for the graph.

4. With the cursor at the left margin and at the bottom of the blank space you just created, type `./text` and press Return.

5. Print the MultiMate document to a file.

6. Exit MultiMate and start the PC LaserWriter Program. On the MultiMate Print menu, enter the MultiMate filename. Press F10. The MultiMate file is printed with the 1-2-3 graph in it.

A summary of MultiMate special features

Table 5-2 summarizes MultiMate's special features.

Table 5-2
MultiMate special features

Code	Description
Alt N or Alt D	Turns on or off Helvetica or Times (depending on whether you type Y or N as the Draft Print selection on the Print Parameters for Document screen).
Alt X	Selects italics; replaces MultiMate shadow print command.
Alt X Alt Z	Boldfaces italics.
^W	Double underlines; replaces the MultiMate command Ctrl_.
Alt A	Turns non-ASCII character set on or off (see Appendix A).
./lotus	Inserts a Lotus 1-2-3 file into your MultiMate document.
./text	Restarts text after the Lotus 1-2-3 graph.

Other standard MultiMate features (see *MultiMate Reference Manual*)

Alt C	Sets point size for a proportionally spaced font, and characters per inch for a fixed-pitch font.
Alt Z	Boldfaces.
Alt =	Underlines.
Alt Q	Superscripts.
Alt W	Subscripts.
Alt O	Strikes through.
F3	Centers text.

Advanced features (see Appendix E)

./cmd	Indicates PostScript commands.
./file	Indicates PostScript file.

Troubleshooting

Here are some typical problems that you may have, their possible causes, and what to do about them.

Pages are blank or have only a single line.

Cause: The page length, the number of lines per page, and the size of type are not properly coordinated. The Scale: is too big for the text to fit on the page.

Solution: Insert the MultiMate page break command, F2, at the logical page end. Reduce the Scale: setting.

Columns in a table that are created with tabs are not aligned.

Cause: The font for the table is proportional. (The LaserWriter condenses consecutive spaces to one space.)

Solution: Redo the table, aligning the columns with tabs and decimal tabs; or redo the table in a fixed-pitch font, such as Courier.

Fonts or special features, such as boldfacing, do not appear where you expect them.

Cause: You changed fonts and did not reenter the codes for the other special features. Remember that font changes automatically turn off boldfacing and other special character features.

Solution: Insert the code to turn off the font.

Chapter 6

Printing
ASCII Files

Having the capability to print files in their ASCII format means that you can print files created with many different programs. You can add LaserWriter printing attributes to your ASCII file before it is printed by choosing features, such as page orientation, size of image, and character set, from the Print menu in the PC LaserWriter Program.

❖ *Note:* Names for files, paths, and directories on the PC LaserWriter Program's ASCII menu follow standard DOS conventions. If you have questions about any of the naming conventions, see your DOS manual.

Printing an ASCII file

Before using the PC LaserWriter Program ASCII menu, you create the file with an application such as a spreadsheet program or a word-processing program and then save the file in ASCII format. Most applications have a separate routine to save a file in ASCII format.

When you want to print an ASCII file with the LaserWriter, follow these steps:

1. Exit from the application and return to DOS.

   For a floppy disk drive system, insert your working Program disk in drive A, but leave the ASCII data disk in drive B.

2. Type LW and press Return. The Main menu appears.

3. Select Print from the Main menu and press Return. The Print menu appears.

4. Select ASCII and press Return. The ASCII menu, illustrated in Figure 6-1, appears.

```
┌──────────────────────────────────────────────────────────────────────┐
│                               ASCII                                  '│
├──────────────────────────────────────────────────────────────────────┤
│ ▶  ASCII File Name:            ┤─                                    ┤ │
│    Print Option:               █Print█ Save Print/Save                │
│    Save As:                                                           │
│                                                                       │
│    Orientation:                █Portrait█ Landscape                   │
│    Number Of Copies:           1                                      │
│    Paper Feed:                 █Auto█ Manual                          │
│    Text Point Size:            12.00                                  │
│    Title:                      Yes █No█                               │
│    Margins (tenths of inch)                                           │
│         Left:                  5                                      │
│         Top:                   5                                      │
│         Bottom:                5                                      │
│    Line Numbers:               Yes █No█                               │
│    Page Break (lines):         *** At Bottom Margin ***               │
│    Character Set:              █LaserWriter█ Intl 1 Intl 2 Printwheel  │
│                                Special                                │
├──────────────────────────────────────────────────────────────────────┤
│    F1  -- Help               F10       -- Print ASCII File            │
│    F3  -- Abort Program      ↑ ↓ → ←  -- Move Selection               │
│    F4  -- Access DOS         Esc       -- Previous menu               │
└──────────────────────────────────────────────────────────────────────┘
```

Figure 6-1
The ASCII menu

You can select an item or enter information on each line of the
ASCII menu.

□ In the ASCII File Name: field, enter the full pathname of
   the file that you want to print.

   For example, if the file Tahiti.txt is stored on a disk in drive B,
   enter B:Tahiti.txt. Or, if the root directory on drive C is the
   current one and the file is in the directory Vacation, type
   C:\Vacation\Tahiti.txt.

□ For Print Option: you select one of three choices: Print,
   Save, or Print/Save.

   If you select Print, the file will be printed but the temporary
   PostScript version of the file will not be saved.

   With the Save option, the file will not be printed but the
   PostScript version will be saved under the filename you type on
   the Save As: line of the menu.

   Generally, you'll use the Save option if you want to edit the
   PostScript file.

   The Print/Save choice causes the file to be printed and the
   PostScript version to be saved. The file is saved under the
   filename you type on the Save As: menu line.

□ At the Save As: menu line, you type the filename to save the
   PostScript version of the file. Do not use the same filename as
   that of the original ASCII file. If you do, an error message
   appears.

ASCII print options

The remaining items on the ASCII menu offer a set of print options.

☐ The `Orientation:` selection is either `Portrait` or `Landscape`. Choosing `Portrait` causes the LaserWriter to print the page vertically (the normal orientation for text pages), while choosing `Landscape` causes it to print horizontally (the usual orientation for spreadsheets or ledgers). Select `Landscape` to print wide tables or graphs.

☐ At the `Number Of Copies:` line, enter a number from 1 to 100.

☐ At the `Paper Feed:` line, `Auto` feed is the normal LaserWriter mode. Select the `Manual` mode when you have to feed in special paper, such as envelopes or transparencies for slides.

☐ The `Text Point Size:` choice lets you change the point size of the typeface. Enter a number from 1 to 100. A point size that is too large—for example, 1000—might overrun the memory of the LaserWriter. If that occurs, either you'll receive an error message or the LaserWriter will print blank pages. Break your file into sections and reprint them separately.

☐ The `Title:` choice lets you print a title at the top of each page. The title includes the filename of the ASCII file, the date, the time, and the page number. Select `Yes` if you want to have titles; select `No` if you don't want them. The default choice is `No`.

☐ The `Margins` are measured in tenths of an inch. The PC LaserWriter Program measures margins from their respective edges of the paper—for example, the left margin is measured from the left edge of the paper, and so on. Enter a number for each margin listed on the menu.

□ The `Line Numbers:` choice lets you select whether you want line numbers on your ASCII document. Line numbering extends down the left side of the page. The numbers start at 1 on the first page and continue in sequence to the end of the file. Select `Yes` to have line numbers; select `No` to omit them. The default choice is `No`.

□ The `Page Break (lines):` field specifies the number of lines on a page. There are 6 single-spaced lines to the inch on the paper; thus, a standard 11-inch page has 66 lines. Pages that are 14 inches long have 84 lines. Envelope lengths vary.

□ The `Character Set:` choices determine the types of characters that you can print. `LaserWriter` is the standard set of characters that is normally available from the LaserWriter. The other options let you print from extended character sets, such as the international character set that contains the German umlaut. See Appendix A for instructions to print from the extended character sets.

The print command

After selecting all of the printing options on the menu, press F10 to send the file to the LaserWriter.

Important   The LaserWriter must be turned on to print. If it is turned off, the PC LaserWriter Program will convert the file to PostScript, but will then display an error message when attempting to print.

During a brief pause, the PC LaserWriter Program converts the file to PostScript format. The LaserWriter status screen then replaces the ASCII menu. Status messages inform you of the progress of the printing. When the printing is complete, press any key and the ASCII menu returns.

❖ *Note:* You can bypass the menu and operate the PC LaserWriter Program directly from DOS. See Appendix B for instructions.

Special ASCII printing features

The PC LaserWriter Program recognizes four control codes in ASCII text for special printing features:

^B or Alt 002	Boldface
^U or Alt 021	Italics
^B^U or Alt 002 Alt 021	Boldface italics
^L or Alt 012	Form feed (same as new page)

Each word processing or spreadsheet application has its own method for entering control codes in a file that is to be in ASCII format. Some require Ctrl codes, while others use the Alt key codes. Refer to your application's reference manual to determine which method you should use.

❖ *A reminder:* The symbol ^ represents the control key. Thus, ^B means press the Ctrl key and simultaneously press the B key. Do not type the ^ (caret) symbol; it is not a substitute for the Ctrl key. Similarly, Alt represents the Alt key and not the letters *A, L,* and *T.*

Enter the control code where you want a special feature to begin and end. For example, if you type

```
The sales department had a ^Bfantastic^B year.
```

this is what would be printed:

```
The sales department had a fantastic year.
```

Note that although the codes will appear on the screen, they will not be printed by the LaserWriter.

Be sure to put the second code in the text to turn off the special feature. If you forget, the LaserWriter will print the rest of the text in that feature.

Some applications will not accept control codes in an ASCII file. Even if you type the codes in the file, the application will strip them out when converting the file into ASCII format. In that case, you will have to enter the control codes with a text editor such as the Edlin editor that is part of DOS.

Chapter 7

Printing in Diablo 630 Mode

The LaserWriter can emulate a Diablo 630 printer. This means you can print files on the LaserWriter that were initially prepared for printing with a Diablo 630 without modifying the files. For instance, if you have already prepared a MultiMate file for printing on a Diablo 630, you can use this PC LaserWriter menu instead of the menu for printing a MultiMate file.

This LaserWriter feature also lets you print files that were prepared with other applications such as PC-Write or FrameWork.

If you use the emulation process with a file and it doesn't print properly, you can try another alternative: Save the file in ASCII format and use the PC LaserWriter Program's ASCII Print menu.

If you are having difficulties printing MultiMate files saved in Diablo format, try saving these files in normal MultiMate format and printing via the MultiMate converter.

Printing a file in Diablo 630 mode

You enter printing features for a file to be printed in Diablo 630 mode by selecting from the PC LaserWriter Program's Diablo 630 Print menu.

❖ *Note:* Names for files, paths, and directories on the Diablo 630 menu follow the standard conventions for DOS and the application that you used to prepare the file. If you have questions about any of these naming conventions, see your application's manual or your DOS manual.

Preparing the file for printing

Before you use the PC LaserWriter Program, you must create the file and prepare it for printing on a Diablo 630 printer. Usually this involves selecting Diablo 630 from a printer selection list in the application. Each application also has its own method for selecting the Diablo 630.

When you're ready to print a Diablo 630 file with the LaserWriter, follow these steps:

1. Exit from the application you used to create and save the file, and return to DOS.

   For a floppy disk drive system, insert your working Program disk in drive A, but leave the Diablo 630 data disk in drive B.

2. Type LW and press Return. The Main menu appears.

3. Select Print from the Main menu and press Return. The Print menu appears.

4. Select Diablo 630 and press Return. The Diablo 630 menu, illustrated in Figure 7-1, appears.

```
┌──────────────────────────────────────────────────────────────────┐
│                           DIABLO 630                               │
├──────────────────────────────────────────────────────────────────┤
│  ▶ Diablo 630 File Name:    ┤-                                    ├│
│    Print Option:            Print  Save  Print/Save                │
│    Save As:                                                        │
│                                                                    │
│    Pitch (CPI):             10  12  15                             │
│    Number Of Copies:        1                                      │
│    Auto Linefeed:           On  Off                                │
│                                                                    │
│    Normal Font:             TimesRoman  Helvetica  Courier  Special│
│       Bold:                 Yes  No                                │
│       Ital/Obliq:           Yes  No                                │
│                                                                    │
│    Bold Font:               TimesRoman  Helvetica  Courier  Special│
│       Bold:                 Yes  No                                │
│       Ital/Obliq:           Yes  No                                │
│                                                                    │
├──────────────────────────────────────────────────────────────────┤
│    F1  -- Help              F10        — Print Diablo 630 File     │
│    F3  -- Abort Program     ↑ ↓ → ←  — Move Selection              │
│    F4  -- Access DOS        Esc        — Previous menu             │
└──────────────────────────────────────────────────────────────────┘
```

Figure 7-1
The Diablo 630 menu

You can select an item or enter information on each line of the Diablo 630 menu.

□ In the `Diablo 630 File Name:` field, enter the full pathname of the file that you want to print.

For example, if the file Tahiti.prn is stored on a disk in drive B, enter `B:Tahiti.prn`. Or, if the root directory on drive C is the current one and the file is in the directory Vacation, type `\Vacation\Tahiti.prn`.

□ For `Print Option:` you select one of three choices: `Print`, `Save`, or `Print/Save`.

If you select `Print`, the file will be printed but the temporary PostScript version of the file will not be saved.

With the `Save` option, the file will not be printed but the PostScript version will be saved under the filename you type on the `Save As:` line of the menu.

Generally, you'll use the `Save` option if you want to edit the PostScript file or print it later on.

The `Print/Save` choice causes the file to be printed and the PostScript version to be saved. The file is saved under the filename you type on the `Save As:` menu line.

□ At the `Save As:` menu line, you type the filename to save the PostScript version of the file. Do not use the same filename as that of the original Diablo 630 file. If you do, an error message appears.

Diablo 630 print and font options

The remaining items on the Diablo 630 menu are print and font options.

☐ The Pitch (CPI): selection lets you specify the number of characters per inch (CPI) that will be printed by the LaserWriter. The three settings normally available from Diablo 630 applications are 10, 12, and 15.

❖ *A note about pitch:* Pitch settings pertain to fixed-pitch fonts, such as Courier. If you select a proportional font, such as Times or Helvetica, point size is the comparable measure of number of characters per inch. For the Pitch (CPI): selection on the menu, a selection of 10 CPI corresponds to 12 points; 12 CPI corresponds to 10 points, and 15 CPI corresponds to 8-point type.

☐ At the Number Of Copies: line, enter a number from 1 to 100.

☐ The selections for Auto Linefeed: let you turn the line feed symbol on and off. Some applications produce files that require a line feed symbol at the end of each line, while other applications automatically add the symbol. Select Yes to turn the auto line feed on and select No to turn it off. If your file prints double-spaced when you expected it to print single-spaced, the PC LaserWriter program is adding an additional line feed symbol to a file that doesn't need one. In that case, select No for this Auto Linefeed: setting.

☐ The sections of the menu labeled Normal Font: and Bold Font: allow you to select normal and boldface fonts for printing the file.

☐ On the Normal Font: line, select the name of the font that you want for the main text. The choices are TimesRoman, Helvetica, Courier, and Special. The Special selection refers to fonts you program yourself. See the section "Programming Additional Fonts" in Appendix E for instructions.

- The next two lines on the menu let you choose `Bold` or `Ital/Obliq:` for the normal font. If you select `Yes` for the respective choice, the text will be printed in the **boldface** or *italics/oblique* version of the normal font. If you select `Yes` for both choices, the text will be printed in ***boldface italics/oblique***.

- The `Bold Font:` line lets you select the font you want for the text's boldface font. As with the normal font, selecting `Yes` can select **boldface,** *italics/oblique,* or ***boldface italics/oblique***. The font you selected for `Bold Font:` will occur in the text wherever you specify boldface. Each application has its own method for specifying boldface.

❖ *Note:* Having the selections for normal and bold fonts gives you a number of different font choices. For example, you could have regular Times as the normal font (`No` and `No` under the `Normal Font:` option) and regular Helvetica as the font in bold (`No` and `No` under `Bold Font:`). Or you could have regular Helvetica as the normal font, but have Times italic as the font in bold. In other words, the bold font is actually another font selection; it doesn't have to be bold.

The print command

After selecting all of the printing options on the menu, press F10 to send the file to the LaserWriter.

Important   The LaserWriter must be turned on to print. If it is turned off, the PC LaserWriter Program will convert the file to PostScript, but will then display an error message when attempting to print.

During a brief pause, the PC LaserWriter Program converts the file to PostScript format. The LaserWriter status screen then replaces the Diablo 630 menu. Status messages inform you of the progress of the printing. When the printing is complete, press any key and the Diablo 630 menu returns.

❖ *Note:* You can bypass the menu and operate the PC LaserWriter Program directly from DOS. See Appendix B for instructions.

Chapter 8

Printing
PostScript
Files

Some applications, such as Microsoft Word, produce files that are already in PostScript format and that can be sent directly to the LaserWriter by using the PC LaserWriter Program's PostScript menu. The LaserWriter will print the file with all of the formatting and special features that you entered in the application.

You can also use the PostScript menu to print files that were saved in PostScript format. For example, if you saved an ASCII file using the `Save` or `Print/Save` option on the PC LaserWriter Program's ASCII menu, the saved file is in PostScript format and can be printed with this menu.

❖ *Note:* Names for files, paths, and directories on the PC LaserWriter Program's PostScript menu follow the standard conventions for DOS and for the application that you used to create the file. If you have questions about the conventions, see your application's user manual or your DOS manual.

Printing a PostScript file

Before you can send a PostScript file to the LaserWriter, you must follow a few preliminary steps. Each application has its own version of those steps.

Preparing the file for printing

To illustrate what is required for printing a PostScript file on the LaserWriter, here are the steps to follow if you want to print a file created with Microsoft Word.

One essential step involves sending an initializing file to the LaserWriter that tells the LaserWriter how to interpret the PostScript files created with the application. The initializing file will be on the disk you receive with your application, not on the PC LaserWriter Program disks. For Microsoft Word versions 2.0 and 2.01, the file is named `mssetup.ps` and is on the Word Utilities Disk. For Word version 3.0, the initializing file is named `applaser.ini` and is also on the Word Utilities Disk. Other applications that produce PostScript files either don't require an initializing file or have their own initializing files that you must send to the LaserWriter.

To send the initializing file to the LaserWriter:

1. Load DOS.

2. At the DOS prompt, enter

   LWPRINT -a *<filename>*

   and press Return.

   The *<filename>* is the name of the initializing file. For example, if you're working with version 2.0 of Microsoft Word, the filename is `mssetup.ps`.

   The -a tells the LaserWriter to ignore some control characters in the file so that the LaserWriter can use it properly.

   The initializing file needs to be sent to the LaserWriter only once, and by only one person on the network. If you're certain that it has been sent (either by you or by someone else), you can skip this step. However, if the LaserWriter has been turned off and then turned on, or the network is "down" for some reason, you must resend the initializing file.

   After the file is loaded, a message on the screen confirms receipt of the file, then the DOS prompt returns. Now you're ready to create and save your Word file.

Creating and saving the file

1. While working in Word, select the Print menu from Word's main menu. Select `Options` and then select `APPLASER` as the printer type. (`APPLASER` is Word's option for the Apple LaserWriter. If it isn't listed as one of the printer choices, load the Word Utilities Disk. The `APPLASER` choice is on that disk.)

2. Create the document as usual, adding all of the special printing and formatting features that you want from Word.

3. Print the document to a disk file by selecting `File` from Word's Print menu. Enter a filename for the file.

   A recommended practice is to save the document as usual before you print it to a disk file. This provides you with a backup copy.

   If you do save the document first (so that it already has a filename), do not use the same name as you use when printing it to a disk file. However, you can give the names different extensions—for instance, Ltrs86.doc for the saved document, and Ltrs86.ps for the document that is printed to a file.

4. Exit Word and return to DOS.

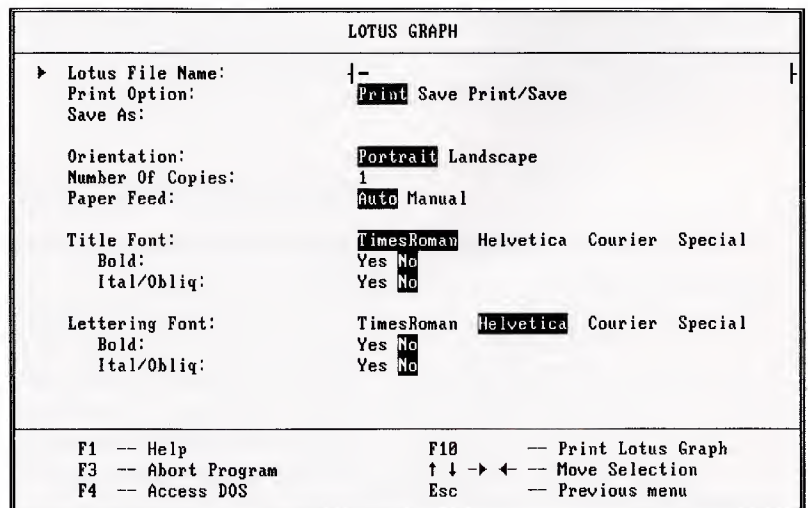5. Start the PC LaserWriter Program.

   For a floppy disk drive system, insert your working Applications disk in drive A, but leave the PostScript data disk in drive B.

6. Type LW and press Return. The Main menu appears.

7. Select Print from the Main menu and press Return. The Print menu appears.

8. Select PostScript and press Return. The PostScript menu, illustrated in Figure 8-1, appears.

```
                             POSTSCRIPT

 ▶  PostScript File Name:      |-                                         |

    Paper Feed:               Auto Manual




    F1  -- Help                    F18        -- Print PostScript File
    F3  -- Abort Program           ↑ ↓ → ←  -- Move Selection
    F4  -- Access DOS              Esc        -- Previous menu
```
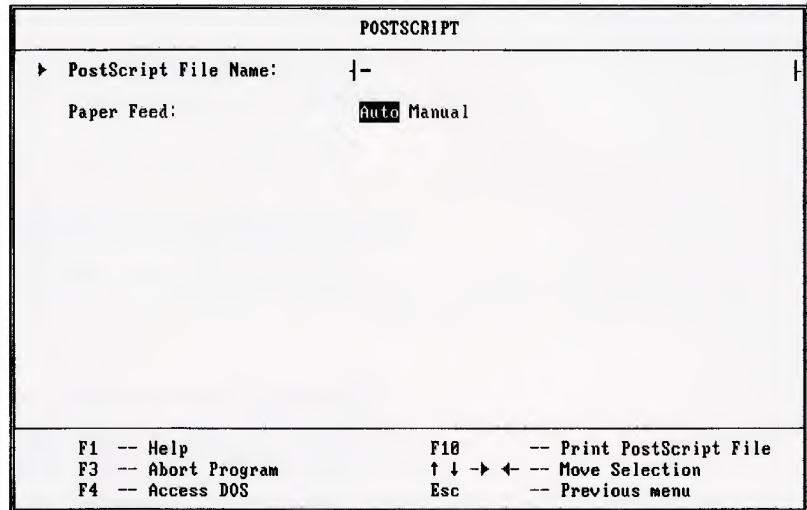
Figure 8-1
The PostScript menu

In the PostScript File Name: field, enter the full pathname of the file that you want to print.

For example, if the file Tahiti.ps is stored on a disk in drive B, enter B:Tahiti.ps. Or, if the root directory on drive C is the current one and the file is in the directory Vacation, type \Vacation\Tahiti.ps.

At the Paper Feed: menu line, Auto feed is the normal LaserWriter mode. Select the Manual mode when you have to feed in a special paper manually, such as envelopes or transparencies for slides. Refer to your LaserWriter manual to see how to use the manual mode.

The print command

After selecting the printing options on the menu, press F10 to send the file to the LaserWriter.

Important

The LaserWriter must be turned on to print. If it is turned off, the PC LaserWriter Program will convert the file to PostScript, but will then display an error message when attempting to print.

Following a brief pause, the LaserWriter status screen replaces the PostScript menu. Status messages inform you of the progress of the printing. When the printing is complete, press any key and the PostScript menu returns.

❖ *Note:* You can bypass the menu and operate the PC LaserWriter Program directly from DOS. See Appendix B for instructions.

Chapter 9

**Printing
Lotus 1-2-3
Spreadsheets
and Graphs**

You can add many LaserWriter printing attributes to your Lotus 1-2-3 file before it is printed. You choose the essential features, such as page orientation, size of image, and character set, from the Print menu in the PC LaserWriter Program.

You enter printing features for your Lotus 1-2-3 files by selecting from the PC LaserWriter Program's menus for Lotus Spreadsheet or Lotus Graph.

❖ *Note:* Names for files, paths, and directories on the PC LaserWriter Program's Lotus menus follow the standard DOS and Lotus conventions. If you have questions about the naming conventions, see your *1-2-3 Reference Manual* or your DOS manual.

Printing a Lotus 1-2-3 file

Before you use the PC LaserWriter Program, create the spreadsheet or graph using Lotus's normal commands. For spreadsheets, use the /Print command and, for graphs, use the /Graph command to select the spreadsheet or graph types, ranges, titles, and other standard options.

Here's what you do after you have created the file and are ready to print:

☐ Save graphs as usual. Remember that 1-2-3 adds the extension .pic to the graph filename.

☐ Save spreadsheets by printing them to a file. Use the 1-2-3 /Print File command to print the spreadsheet to a disk file. Remember that 1-2-3 adds the extension .prn to spreadsheets that are printed to a disk file.

After you have saved the graph or printed the spreadsheet to a disk file, you're ready to use the PC LaserWriter Program's Lotus 1-2-3 menus. Here are the steps you should use:

1. Exit from 1-2-3 and return to DOS.

   For a floppy disk drive system, insert your working Program disk in drive A, but leave the Lotus data disk in drive B.

2. Type LW and press Return. The Main menu appears.

3. Select Print from the Main menu and press Return. The Print menu appears.

4. Select Lotus Spreadsheet or Lotus Graph and press Return.

As illustrated in Figures 9-1 and 9-2, the appropriate PC LaserWriter Program menu appears.

```
┌──────────────────────────────────────────────────────────────────────┐
│                          LOTUS SPREADSHEET                             │
│  ▶ Lotus File Name:       ┤─                                        ├  │
│    Print Option:          ▓Print▓ Save Print/Save                      │
│    Save As:                                                            │
│                                                                        │
│    Orientation:           ▓Portrait▓ Landscape                         │
│    Number Of Copies:      1                                            │
│    Paper Feed:            ▓Auto▓ Manual                                │
│    Text Point Size:       12.00                                        │
│    Margins (tenths of inch)                                            │
│        Left:              5                                            │
│        Top:               5                                            │
│        Bottom:            5                                            │
│    Page Break (lines):    *** At Bottom Margin ***                     │
│    Character Set:         ▓LaserWriter▓ Intl 1 Intl 2 Printwheel        │
│                           Special                                      │
│                                                                        │
├────────────────────────────────────────────────────────────────────── │
│    F1  -- Help              F10       -- Print Lotus Spreadsheet        │
│    F3  -- Abort Program     ↑ ↓ → ← -- Move Selection                  │
│    F4  -- Access DOS        Esc       -- Previous menu                  │
└──────────────────────────────────────────────────────────────────────┘
```

Figure 9-1
The Lotus Spreadsheet menu

```
┌──────────────────────────────────────────────────────────────────────┐
│                             LOTUS GRAPH                                │
│  ▶ Lotus File Name:       ┤─                                        ├  │
│    Print Option:          ▓Print▓ Save Print/Save                      │
│    Save As:                                                            │
│                                                                        │
│    Orientation:           ▓Portrait▓ Landscape                         │
│    Number Of Copies:      1                                            │
│    Paper Feed:            ▓Auto▓ Manual                                │
│                                                                        │
│    Title Font:            ▓TimesRoman▓ Helvetica  Courier  Special     │
│        Bold:              Yes ▓No▓                                     │
│        Ital/Obliq:        Yes ▓No▓                                     │
│                                                                        │
│    Lettering Font:        TimesRoman ▓Helvetica▓ Courier  Special      │
│        Bold:              Yes ▓No▓                                     │
│        Ital/Obliq:        Yes ▓No▓                                     │
│                                                                        │
├────────────────────────────────────────────────────────────────────── │
│    F1  -- Help              F10       -- Print Lotus Graph              │
│    F3  -- Abort Program     ↑ ↓ → ← -- Move Selection                  │
│    F4  -- Access DOS        Esc       -- Previous menu                  │
└──────────────────────────────────────────────────────────────────────┘
```

Figure 9-2
The Lotus Graph menu

The top portions of the menus are the same and require the same type of information.

☐ In the `Lotus File Name:` field, enter the full pathname of the file that you want to print.

For example, if the file Tahiti.prn is stored on a disk in drive B, enter `B:Tahiti.prn`. Or, if the root directory on drive C is the current one and the file is in the directory Vacation, type `\Vacation\Tahiti.prn`.

☐ For `Print Option:` select one of three choices: `Print,` `Save, or Print/Save.`

If you select `Print,` the file will be printed but the temporary PostScript version of the file will not be saved.

With the `Save` option, the file will not be printed but the PostScript version will be saved under the filename you type on the `Save As:` line of the menu.

Generally, you'll use the `Save` option if you want to edit the PostScript file.

The `Print/Save` choice causes the file to be printed and the PostScript version to be saved. The file is saved under the filename you type on the `Save As:` menu line.

☐ At the `Save As:` menu line, you type the filename to save the PostScript version of the file. Do not use the same filename as that of the original Lotus file. If you do, an error message appears.

Lotus spreadsheet print options

The remaining items on the Lotus Spreadsheet menu are print options.

☐ The `Orientation:` selection is either `Portrait` or `Landscape.` Choosing `Portrait` causes the LaserWriter to print the page vertically (the normal orientation for text pages), while choosing `Landscape` causes it to print horizontally (the usual orientation for spreadsheets or ledgers). Select `Landscape` to print wide tables or graphs.

☐ At the `Number Of Copies:` line, enter a number from 1 to 100.

- At the `Paper Feed:` line, `Auto` feed is the normal LaserWriter mode. Select the `Manual` mode when you have to feed in special paper, such as transparencies for slides.

- The `Text Point Size:` choice lets you change the point size of the typeface. Enter a number from 1 to 100. A point size that is too large—for example, 1000—might overrun the memory of the LaserWriter. If that occurs, either you'll receive an error message or the LaserWriter will print blank pages. Break your file into sections and reprint them separately.

- The settings for the `Margins` are measured in tenths of an inch. The PC LaserWriter Program measures margins from their respective edges of the paper—for example, the left margin measurement begins at the left edge of the paper, and so on. Enter a number for each margin listed on the menu.

- The `Page Break (lines):` field specifies the number of lines on a page. There are 6 single-spaced lines to the inch on the paper; thus, a standard 11-inch page has 66 lines. Pages that are 14 inches long have 84 lines. A page 8.5 inches wide printed in `Landscape` has 51 lines per page. (You can also set the lines per page by using commands while in Lotus.)

- The `Character Set:` choices determine the types of characters that you can print. `LaserWriter` is the standard set of characters that is normally available from the LaserWriter. The other options let you print from extended character sets, such as the international character set that contains the German umlaut. See Appendix A for instructions to print from the extended character sets.

Lotus graph print and font options

The remaining items on the Lotus Graph menu are print and font options.

The print choices on the Lotus Graph menu for `Orientation:`, `Number Of Copies:`, and `Paper Feed:` are the same as on the Lotus Spreadsheet menu.

- The sections of the menu labeled `Title Font:` and `Lettering Font:` allow you to select regular and boldface fonts for the title and lettering on the graph. Lettering refers to the labels on the graph's axes, or names of wedges of a piechart, or other labels on the graph.

□ On the `Title Font:` line, select the name of the font that you want for the title. The choices are `TimesRoman`, `Helvetica`, `Courier`, and `Special`. The `Special` selection refers to fonts you program yourself. See Appendix E for instructions.

□ The next two lines on the menu let you choose `Bold:` or `Ital/Obliq:` for the title font. If you select `Yes` for the respective choices, the title will be printed in the **boldface** or *italics/oblique* version of the title font. If you select `Yes` for both choices, the title will be printed in ***boldface italics/oblique.***

□ The `Lettering Font:` line lets you select the font you want for the graph's lettering. As with the title font, selecting `Yes` can select **boldface,** *italics/oblique,* or ***boldface italics/oblique.***

The print command

After selecting all of the printing options on the menu, press F10 to send the file to the LaserWriter.

Important The LaserWriter must be turned on to print. If it is turned off, the PC LaserWriter Program will convert the file to PostScript, but will then display an error message when attempting to print.

During a brief pause, the PC LaserWriter Program converts the file to PostScript format. The LaserWriter status screen then replaces the Lotus menu. Status messages inform you of the progress of the printing. When the printing is complete, press any key and the Lotus menu returns.

❖ *Note:* You can bypass the menu and operate the PC LaserWriter Program directly from DOS. See Appendix B for instructions.

Appendixes

Appendix A

Fonts and Character Sets

The PC LaserWriter Program gives you direct access to 12 of the 34 fonts built into the LaserWriter Plus and to 4 extended character sets. In addition, you can redefine the available font choices and the extended character sets by modifying the PostScript files that define them. You can also define your own fonts and extended set of characters. (See Appendix E for instructions to modify the appropriate files.)

Certain applications, such as WordStar, also can access additional fonts by interpreting characters embedded in the text of a file. For instance, if you have a LaserWriter Plus, the control characters ^PY^PW^B in the text of a WordStar file let you print characters in the Symbol font. (Remember that the ^ symbol represents the Ctrl key and not the Caret key.)

Accessing the characters of the extended character sets works with embedded control characters as well. The conversion tables given later show you which keys on the keyboard correspond to the extended characters.

Some applications offer their own methods of accessing multiple fonts and extended character sets. For example, in Microsoft Word, the command Format/character selects a new LaserWriter font.

Fonts

The fonts available in the PC LaserWriter Program are Times, Helvetica, Courier, and their italic, bold, and bold italic versions The Symbol font is available for WordStar files printed on a LaserWriter Plus.

Times font

Times Regular, 12 point

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|

Times Bold, 12 point

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|

Times Italic, 12 point

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&()_+[]{};':",./<>?\|*

Times Bold Italic, 12 point

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&()_+[]{};':",./<>?\|*

Helvetica font

Helvetica Regular, 12 point

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|

Helvetica Bold, 12 point

**abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|**

Helvetica Oblique, 12 point

*abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|*

Helvetica Bold Oblique, 12 point

***abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|***

Courier font

Because Courier is a fixed-pitch font, its size is measured in pitch, not in points. These Courier font samples are at 10 characters per inch (CPI), which is equivalent to 12 point.

Courier Regular

```
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|
```

Courier Bold

```
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|
```

Courier Oblique

```
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|
```

Courier Bold Oblique

```
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=
`~!@#$%^&*()_+[]{};':",./<>?\|
```

Symbol font

Symbol Regular, 12 point

αβχδεφγηιφκλμνοπθρστυϖωξψζ
ΑΒΧΔΕΦΓΗΙϑΚΛΜΝΟΠΘΡΣΤΥςΩΞΨΖ
1234567890-=
~!≅#∃%⊥&*()_+[]{};Π:∀,./<>?∴|

Selecting fonts

Table A-1 summarizes the steps to change fonts within the PC LaserWriter Program. The control characters turn the fonts on and off. For example, if you want to change the text in a WordStar file from Courier to Times, enter ^PW where you want Times to begin, and then enter ^PW again where you want Times to end. To print an entire file in a font, enter its control character at the beginning of the file.

Table A-1
Control characters for selecting fonts

| Application | Control characters | | | | Notes |
	Courier	Times	Helvetica	Symbol	
WordStar	Default	^PW	^PY	^PY^PW^B	^PY^PW will print in Times until you enter the ^B.
					Changing fonts also turns off other features such as italics.
MultiMate	Default	Alt D or Alt N	Alt D or Alt N	Not available	Alt D and Alt N selections depend on how you set up your MultiMate Print Parameters for Document screen. See Chapter 5 for instructions.
ASCII	Default	Not available	Not available	Not available	
Diablo 630	Select fonts from the options listed on the menu.				
PostScript	Select fonts directly from the application's commands.				
Lotus 1-2-3					
Spreadsheet	Default	Not available	Not available	Not available	
Graph	Select fonts from the options listed on the menu.				

Printing from extended character sets

Extended characters are those that the LaserWriter can print but that aren't shown on your keyboard. The German umlaut or the British pound sign are two examples of extended characters.

The five choices for character sets on the PC LaserWriter menus are: LaserWriter Standard, International 1, International 2, Printwheel, and Special. Tables A-2 through A-5 list the characters available in each set. The characters from the Special character set are not listed because Special lets you define your own set of characters. See Appendix E for instructions.

The basic process to print an extended character is

1. Using your word processing or spreadsheet application, load the file that you want to print.

2. From Tables A-2 through A-5, find the extended character that you want to be in the file. Enter its code (also found in the tables) where you want the character to appear in your file's text.

3. Save the file, exit the application, and start the PC LaserWriter Program. Select the menu for printing that application's files.

4. At the Character Set: option on the menu, select the name of the character set you used in step 2. The LaserWriter will print the extended character wherever you've entered its code.

Each application has its own method for entering the codes in the text. In MultiMate, you press Alt and enter the ASCII code for the character. In WordStar and other programs, you enter a control character first, and then type a keyboard character. The control character tells the LaserWriter to interpret the characters that follow as extended characters instead of their normal keyboard symbols.

■ **WordStar:** Enter ^PE where you want the character to appear. Refer to the extended character set tables and enter the keyboard equivalent that corresponds to the extended character you want. For example, in the LaserWriter Standard character set, the character # is the keyboard equivalent for the British pound sign, £. To print the £, enter ^PE#^PE. The LaserWriter will print £ at that place in the text.

■ **MultiMate and Microsoft Word:** Hold down the Alt key and enter the ASCII code to produce the extended character. You must type the ASCII number code with the keys on the numeric keypad, not with the keys across the top of the keyboard. For example, in the LaserWriter Standard character set, the ASCII code for the £ is 163. To put it in your text, enter Alt163. The LaserWriter will print the £ at that place in the text.

■ **ASCII, Lotus 1-2-3 spreadsheet and graph, and Diablo 630:**
Use the applications' commands, not those in the PC
LaserWriter Program, to print extended characters. However,
when you save a file as an ASCII file, some applications do not
recognize the control character. If that occurs with your
application, you can use the DOS editor, Edlin, or other text
editor to embed codes in the text by holding down the Alt key
and entering the ASCII number. Be sure to use the numeric
keypad to enter the number.

Table A-2
Extended characters for the LaserWriter Standard character set

ASCII code	Character	Keyboard	ASCII code	Character	Keyboard
161	¡	!	191	¿	?
162	¢	"	193	`	A
163	£	#	194	´	B
164	⁄	$	195	ˆ	C
165	¥	%	196	˜	D
166	ƒ	&	197	¯	E
167	§	"	198	˘	F
168	¤	(	199	˙	G
169	'	)	200	¨	H
170	"	*	202	°	J
171	«	+	203	¸	K
172	‹	,	205	˝	M
173	›	-	206	%%%	N
177	–	1	207	ˇ	O
178	†	2	208	—	P
179	‡	3	227	%%%	c
180	·	4	232	%%%	h
182	¶	6	233	Ø	i
183	•	7	235	º	k
184	‚	8	245	ı	u
185	„	9	248	%%%	x
186	"	:	249	ø	y
187	»	;	251	ß	{
188	…	<			

Table A-3
Extended characters in the International 1 character set

ASCII code	Character	Keyboard	ASCII code	Character	Keyboard
128	Ç		150	û	
129	ü		151	ù	
130	é		152	ÿ	
131	â		153	Ö	
132	ä		154	á	
133	à		155	¢	
134	å		156	£	
135	ç		157	¥	
136	ê		159	ƒ	
137	ë		160	á	space
138	è		161	í	!
139	ï		162	ó	"
140	î		163	ú	#
141	ì		164	ñ	$
142	Ä		165	Ñ	%
143	Å		166	ª	&
144	É		167	º	'
145	æ		168	¿	(
146	Æ		173	¡	-
147	ô		174	«	.
148	ö		175	»	/
149	ò		225	ß	a

Table A-4
Extended characters in the International 2 character set

ASCII code	Character	Keyboard	ASCII code	Character	Keyboard
128	Ç		152	ÿ	
129	ü		153	Ö	
130	é		154	Ü	
131	â		155	ø	
132	ä		156	£	
133	à		157	Ø	
134	å		158	L	
135	ç		159	l	
136	ê		160	á	space
137	ë		161	í	!
138	è		162	ó	"
139	ï		163	ú	#
140	î		164	ñ	$
141	ì		165	Ñ	%
142	Ä		166	õ	&
143	Å		167	Õ	'
144	É		168	¿	(
145	æ		169	ã	)
146	Æ		170	Ã	*
147	ô		173	¡	-
148	ö		174	«	.
149	ò		175	»	/
150	û		225	ß	a
151	ù				

Table A-5
Extended characters in the Printwheel character set

ASCII code	Character	Keyboard	ASCII code	Character	Keyboard
91	Ä		123	ä	
92	Ö		124	ö	
93	Å		125	å	

Symbol font extended characters

The Symbol font is not a choice for the `Character Set:` option on the menus. It is available for WordStar files only. See Chapter 4 for more information. If you're working with a WordStar file and you've selected the Symbol font for printing, you can print its extended characters by selecting `LaserWriter` for the `Character Set:` option. The control codes you enter in the text are the same as if you were using any other font.

Table A-6
Extended characters for the Symbol font

ASCII code	Character	Keyboard	ASCII code	Character	Keyboard
161	ϒ	!	189	|	=
162	′	"	190	—	>
163	≤	#	191	⌟	?
164	/	$	192	ℵ	@
165	∞	%	193	ℑ	A
166	ƒ	&	194	ℜ	B
167	♣	'	195	℘	C
168	♦	(	196	⊗	D
169	♥	)	197	⊕	E
170	♠	*	198	∅	F
171	↔	+	199	∩	G
172	←	,	200	∪	H
173	↑	-	201	⊃	I
174	→	.	202	⊇	J
175	↓	/	203	⊄	K
176	°	0	204	⊂	L
177	±	1	205	⊆	M
178	″	2	206	∈	N
179	≥	3	207	∉	O
180	×	4	208	∠	P
181	∝	5	209	∇	Q
182	∂	6	210	®	R
183	●	7	211	©	S
184	÷	8	212	™	T
185	≠	9	213	∏	U
186	≡	:	214	√	V
187	≈	;	215		W
188	⋯	<	216	¬	X

(continued)

Table A-6 (continued)
Extended characters for the Symbol font

ASCII code	Character	Keyboard	ASCII code	Character	Keyboard
217	∧	Y	236	⌠	l
218	∨	Z	237	⎰	m
219	⇔	[	238	⎩	n
220	⇐	\	239	⎢	o
221	⇑	]	240		p
222	⇒	^	241	⟩	q
223	⇓	_	242	⌡	r
224	◊	`	243	⎧	s
225	⟨	a	244	⎢	t
226	®	b	245	⎭	u
227	©	c	246	⎞	v
228	™	d	247	⎟	w
229	Σ	e	248	⎠	x
230	⎛	f	249	⎤	y
231	⎜	g	250	⎥	z
232	⎝	h	251	⎦	{
233	⎡	i	252	⎫	|
234	⎢	j	253	⎬	}
235	⎣	k	254	⎭	~

Appendix B

Operating the PC LaserWriter Program From DOS

You do not have to use the PC LaserWriter Program's menus to print files on the LaserWriter. Instead, you can enter commands directly from the DOS prompt. You follow the same process as the one for entering standard DOS commands.

You still must prepare the files as described in Chapters 4 through 9 of this manual. For instance, you must print a Lotus 1-2-3 spreadsheet to a disk file before the PC LaserWriter Program can send the file to the LaserWriter.

To print a file from a PC with two floppy disk drives, the working Program disk must be in drive A and the disk containing the file in drive B. To print from a hard disk system, the file can be in any directory; it does not need to be in the same one as your PC LaserWriter Program. If the file and PC LaserWriter Program are in different directories, be sure to give the complete pathname when specifying the file to be printed.

To print a file from the DOS prompt, you enter a conversion command, followed by the print options you want for the file, and by the name of the file to be printed. The conversion command converts the file to PostScript and then sends the file to the LaserWriter. Each application has its own conversion command.

The general form of the conversion command is

A>LWxx [*options*] *filename* [*outfilename*]

Options are the printing options, such as the number of copies to print, orientation, and point size. Options are not required on the command line.

Filename is the name of the file you want to print. The filename is required on the command line.

Outfilename is the name of a file in which you want to save the PostScript version of the original file. The outfilename is necessary only when you want to save the file.

Here's an example of the process for printing a MultiMate file from the command line. The conversion command for MultiMate files is lwmm, and two printing options are -r and -s#. The -r rotates the printing to Landscape orientation, and the -s# reduces or enlarges the size of the printing. To print the MultiMate file *Sales86.doc* from a disk in drive B, to select the Landscape orientation, and to print so that the characters are reduced to 90 percent of their normal size, you would type

```
A>lwmm -r -s.9 B:Sales86.doc
```

Note that the options always begin with a minus sign (–). You can also combine the option symbols in LWASC. For instance, in the example, -r -s.9 can also be written as -rs.9. There must always be a leading minus sign when the options are combined.

Do not include a space between the option symbol and the parameter value. For example, the correct form for the -s option is -s# not -s #. If you include a space, an error message will appear.

If the options duplicate a selection available to you from the application itself, the choice you make in the application usually has priority over the command line option. For instance, if you select Number Of Copies: as 2 while in MultiMate, and then type -c6 on the command line, the LaserWriter will print 2 copies of your file.

❖ *Note:* Options that override the selections you make from the application are noted in Tables B-2 through B-6.

If you do not include an option on the command line, the LaserWriter will print the file with the option's default value. For example, if you omit the number of copies (-c#) option, the LaserWriter will print 1 copy.

The conversion commands

Table B-1 summarizes the conversion commands for the different applications that you can use with the PC LaserWriter Program.

Table B-1
The conversion commands

Application	Command	Notes
WordStar	lwws	Many additional features available with embedded control characters.
MultiMate	lwmm	Must print file to disk first.
ASCII	lwasc	Accepts ASCII files from other applications that are not directly supported by the PC LaserWriter Program.
Diablo 630	lw630	Each application has its own method of selecting the LaserWriter as the printer.
PostScript (or Word)	lwprint	Word has its own conversion command: the lwprint command transmits the file over the AppleTalk network system; Word requires an initializing file (mssetup.ps or applaser.ini) to be sent to the LaserWriter.
Lotus 1-2-3		
Spreadsheet	lwasc	The PC LaserWriter Program treats spreadsheets as ASCII files; print file to disk first.
Graph	lw123	Must print file to disk first.

Options

Each application has its own set of printing options. Tables B-2 through B-6 list the available options.

To see a brief summary of the options for a conversion command, type that command at the DOS prompt and press Return. For example, type `lwws` and press Return to see a list of the options for the WordStar conversion.

You can also read information about the program in the file Readme.doc. Use the DOS command `Type` to read the file on the screen.

WordStar and MultiMate options

WordStar and MultiMate files have the same options available from the command line. Table B-2 summarizes the options.

Table B-2
Command line options for WordStar and MultiMate

Feature	Code	Parameter	Example	Description
Number of copies	-c#	1 to 100	A>lwmm -c5 test.doc	Prints 5 copies of test.doc. Default is 1 copy.
Character set	-i#	0,1,2,3,4	C>lwws -i1 french.ws	Substitutes characters from International 1 character set at control characters in french.ws.
				The other numbers signify: 0 = Default is the LaserWriter Standard character set. 2 = International set 2 3 = Printwheel characters 4 = your own set of programmed characters
Keeps lwps.$$$ temporary file	-k	None	C>lwmm -k pers.doc	Keeps the temporary lwps.$$$ PostScript file after pers.doc is printed. Default is to delete all lwps.$$$ files.
Orientation	-r		C>lwws -r test.ws	Prints test.ws in Landscape. Default is Portrait.
Scale	-s#	Size	A>lwmm -s1.1 ltrs.doc	Prints ltrs.doc enlarged to 110 percent. Default is 1.0.

ASCII and Lotus 1-2-3 spreadsheet options

ASCII files and Lotus 1-2-3 spreadsheet files have the same options available from the command line. Table B-3 summarizes the options. Remember that the lwasc conversion command converts both ASCII and Lotus 1-2-3 spreadsheet files.

Table B-3
Command line options for ASCII and Lotus 1-2-3 spreadsheet files

Feature	Code	Parameter	Example	Description
Append to a file	−a	None	A>lwasc −a forms.txt test.ps	Appends converted PostScript file of forms.txt to test.ps (the outfile).
Print bold	−b	None	A>lwasc −b test.asc	Prints the entire file in boldface.
Number of copies	−c#	Number	C>lwasc −c4 sales86.txt	Prints 4 copies of sales86.txt. Default is 1 copy.
Tab stops	−e#	Spaces	C>lwasc −e5 persnl.txt	Prints persnl.txt with tab stops every 5 spaces. Default is 8 spaces. Must be between 0 and 80.
Print list	−f	Filename	C>lwasc −f list.asc	Prints the files listed in the script file list.asc. A script file contains a list of filenames of other files.
Character set	−i#	0,1,2,3,4	C>lwasc −i1 french.txt	Substitutes characters in french.txt from International set 1 at control characters.
				The other numbers signify: 0 = Default is the LaserWriter Standard character set. 2 = International set 2 3 = Printwheel characters 4 = your own programmed set of characters
Keeps lwps.$$$ temporary file	−k	None	C>lwasc −k pers.txt	Keeps the temporary lwps.$$$ PostScript file after pers.txt is printed. Default is to delete all lwps.$$$ files.

(continued)

Table B-3 (continued)
Command line options for ASCII and Lotus 1-2-3 spreadsheet files

Feature	Code	Parameter	Example	Description
Page break	−l#	Line	A>lwasc −l84 test.txt	Sets page break at line 84 for test.txt. Default is page break setting from the application. *Note:* This option overrides the application setting.
Bottom margin	−mb#	0.1 inch	C>lwasc −mb10 test.txt	Prints test.txt with 1-inch bottom margin. Default is 0.5 inch.
Left margin	−ml#	0.1 inch	A>lwasc −ml10 new.txt	Prints new.txt with 1-inch left margin. Default is 0.5 inch. (Settings for all margins can be negative.)
Top margin	−mt#	0.1 inch	C>lwasc −mt10 test.txt	Prints test.txt with 1-inch top margin. Default is 0.5 inch.
Line numbers	−n	None	A>lwasc −n listing.txt	Prints listing.txt with each line numbered on the left side of the page. Default is no numbering.
List program	−oa	None	A>lwasc −oa Kevs.asc	Lists assembler program Kevs.asc. File is printed with the options −e8, −ml5, and −s8.
List program	−oc	None	C>lwasc −oc Bens.c	Lists "C" program Bens.c. File is printed with the options −e4, −ml10, −n, −t, and −s8.
Converts but doesn't print	−p	None	A>lwasc −p test.txt	Converts test.txt to PostScript but doesn't send it to the LaserWriter. Default sends file to the LaserWriter.
Orientation	−r	None	C>lwasc −r test.txt	Prints test.txt in Landscape. Default is Portrait.
Point size	−s#	Points	A>lwasc −s10.5 table.txt	Prints table.txt in 10.5 point. Default is 12.
Page title	−t	None	C>lwasc −t Chap5.txt	Prints Chap5.txt with filename and date and time at top of each page. Default is no titles.
Paper size	−z#	0 or 1	C>lwasc −z0 ltrs.txt	Entering 0 selects 8.5- by 11-inch paper. Entering 1 selects 8.5- by 14-inch paper. Default is 0.

Lotus 1-2-3 graph options

Table B-4 summarizes the options available for Lotus 1-2-3 graph (.pic) files from the command line. The option −m is of particular interest. It shows you a menu of the other options, and you can then enter your selections on that menu instead of from the command line. The choices and their parameters are the same as listed in the table.

Table B-4
Command line options for Lotus 1-2-3 graph (.pic) files

Feature	Code	Parameter	Example	Description
Number of copies	−c#	1 to 100	A>lw123 −c5 tst.pic	Prints 5 copies of tst.pic. Default is 1.
Title font	−f0	Font name	A>lw123 −f0Courier tst.pic	Selects Courier as font for graph title of tst.pic. Default is Times Bold. (See Appendix E for a list of available LaserWriter fonts.)
Lettering font	−f1	Font name	A>lw123 −f1Courier tst.pic	Selects Courier as font for graph lettering of tst.pic. Default is Times. (See Appendix E for a list of available LaserWriter fonts.)
Keeps lwps.$$$ temporary file	−k	None	C>lw123 −k pers.pic	Keeps the lwps.$$$ temporary PostScript file after pers.pic is printed. Default is to delete all lwps.$$$ files.
Graph menu	−m	None	C>lw123 −m	Shows menu for selecting fonts and other graph options.
Orientation	−r		C>lw123 −r test.pic	Prints test.pic in Landscape. Default is Portrait.

Diablo 630 options

Table B-5 summarizes the options available at the command line for files configured to print on a Diablo 630 printer.

Table B-5
Command line options for Diablo 630 files

Feature	Code	Parameter	Example	Description
Append to a file	−a	None	A>lw630 −a forms.txt test.ps	Appends converted PostScript file of forms.txt to test.ps (the outfile). The appended file overwrites the outfile.
Auto linefeed	−af	None	C>lw630 −af test.txt	Prints test.txt with auto linefeed on. Default is off.
Print bold	−b	None	A>lw630 −b test.txt	Prints the entire file in boldface. Default is normal typeface.
Number of copies	−c#	Number	C>lw630 −c4 sales86.txt	Prints 4 copies of sales86.txt. Default is 1 copy.
Print list	−f	Filename	C>lw630 −f list.asc	Prints the files listed in the script file list.asc.
Keeps lwps.$$$ temporary file	−k	None	C>lw630 −k pers.txt	Keeps the temporary lwps.$$$ PostScript file after pers.txt is printed. Default is to delete all lwps.$$$ files.
Lines per page	−l#	Line	A>lw630 −l50 test.txt	Sets number of printed lines per page at 50 for test.txt. Default is 66.
Menu	−m	None	C>lw630 −m	Shows menu for selecting fonts and other options.
Left margin	−ml#	0.1 inch	A>lw630 −ml10 new.txt	Adds 1-inch left margin to new.txt. (Settings for all margins can be negative.)
Top margin	−mt#	0.1 inch	C>lw630 −mt10 test.txt	Adds 1-inch top margin to test.txt.
Converts but doesn't print	−p	None	A>lw630 −p test.txt	Converts test.txt to PostScript but doesn't send it to the LaserWriter. Default sends file to the LaserWriter.

Table B-5 (continued)
Command line options for Diablo 630 files

Feature	Code	Parameter	Example	Description
Pitch	−s#	10,12, or 15	A>lw630 −s10 table.txt	Prints table.txt at 10 CPI. Default is 12.
Title font	−f0	Font name	A>lw630 −f0Courier tst.pic	Selects Courier as font for graph title of tst.pic. Default is Times Bold. (See Appendix E for a list of available LaserWriter fonts.)
Lettering font	−f1	Font name	A>lw630 −f1Courier tst.pic	Selects Courier as font for graph lettering of tst.pic. Default is Times. (See Appendix E for a list of available LaserWriter fonts.)

Options for the LWPRINT command

LWPRINT is the command in the PC LaserWriter Program that transmits the file to be printed through the AppleTalk Personal Network to the LaserWriter. You use LWPRINT to send files that have already been converted to PostScript. Such files include those prepared with Microsoft Word and those that you saved in their PostScript form after they were converted with one of the conversion commands. Table B-6 summarizes the LWPRINT options available from the command line.

Table B-6
Command line options for the LWPRINT command

Feature	Code	Parameter	Example	Description
Indicates ASCII	−a	None	A>lwprint −a test.ps	Program strips end-of-text character (Ctrl-D) and other control characters from the file in order to print properly on the LaserWriter. Default is not to strip the control characters.
Number of copies	−c#	1 to 100	A>lwprint −c5 test.ps	Prints 5 copies of test.ps. Default is 1 copy.
Paper feed	−m	None	C>lwprint −m ltrs.ps	Sets LaserWriter paper feed to manual. Default is automatic.
Quiet mode	−q	None	A>lwprint −q new.ps	Sends status and error messages to a file.
Error trap	−w	None	C>lwprint −w test.ps	Waits for end-of-file character from the LaserWriter. Default is not to wait for end-of-file character from the LaserWriter.

Selecting a printer

The lwselect.bat file is a batch file that lets you select a LaserWriter printer.

1. At the DOS prompt, type `lwselect` and press Return. A screen appears that lists all of the zones available on the AppleTalk network system. It is the same screen that appears when you select a printer using the PC LaserWriter Program's menu.

2. Using the cursor keys, select the zone you want and press the Return key. The PC LaserWriter Program searches the selected zone for LaserWriters on it. The next screen that appears lists the LaserWriters on the selected zone.

3. Select the LaserWriter you want to print your files and press Return.

You do not have to select a printer each time you start the PC LaserWriter Program. Your selection is saved until you change it and select a new printer.

Installing the PC LaserWriter Program for specific programs

If you follow the installation procedures in Chapter 2 of this manual, the PC LaserWriter Program will work with all the applications listed on the menus. However, to save space on your disk, you can install the program so it works only with specific applications. For example, if you plan to print only WordStar files, you do not need the PC LaserWriter Program's files that convert MultiMate files to PostScript. Table B-7 describes the files on the disks.

Table B-7
PC LaserWriter Program files

Filename	Description
atalk.exe	AppleTalk driver.
lw.exe	Menu program.
install.exe	Installs software on floppy or hard disks.
lwasc.exe	Converts ASCII files and Lotus 1-2-3 spreadsheet files.
lwws.exe	Converts WordStar files.
lwmm.exe	Converts MultiMate files.
lw123.exe	Converts Lotus 1-2-3 graph files.
lw.env	Remembers printer selection.
lw630.exe	Converts files prepared for a Diablo 630 printer.
lwprint.exe	Sends PostScript file to the LaserWriter.
lwselect.bat	Runs the menu for selecting a printer.
fontinfo.def	Defines fonts available for printing.
lwplus.def	Defines fonts for the LaserWriter Plus.
lwstndrd.def	Defines fonts for the LaserWriter.
lwdict.ps	Dictionary file required for converting WordStar and MultiMate files.
usercode.ps	An example of character set reencoding.
userdict.ps	An example of a user dictionary containing PostScript procedures.
gdict.ps	Dictionary file required for converting Lotus 1-2-3 graph files.
group1.ps	Defines characters in International 1.
group2.ps	Defines characters in International 2.
pwlocal.ps	Defines characters in Printwheel selection.
recode.ps	Reprograms special characters.
testpage.ps	Defines the LaserWriter test page.

(continued)

Table B-7 (continued)
PC LaserWriter Program files

Filename	Description
style.ps	Contains PostScript programs for special figures such as ruled lines on the printed page.
D630.pdt	Printer description table for some Diablo 630 applications.
readme.doc	Information file (supplement to this manual).
lwdir	Directory created on your hard disk to hold the PC LaserWriter Program.
*.hlp	Thirteen files containing the on-screen help information.

Appendix C

Technical Specifications

Memory requirements

Minimum RAM: 256K.

Memory that the AppleTalk driver consumes: 55K.

Memory that DOS consumes: 40K.

Available free memory with 256K system: 161K.

System requirements

The PC LaserWriter Program and the LocalTalk PC Card require the following resources. If your system includes other boards that compete for these resources, the operation of the LocalTalk PC Card and the PC LaserWriter Program may be affected.

- □ The receiver uses DMA channel 1 to receive packets without processor intervention.
- □ Interrupt Priority Level 3 is used.
- □ User Timer Vector $1c is used for periodic tasks.
- □ Driver requests are at interrupt $60.
- □ The I/O port requires addresses $240 through $247.

DIP switch description

The DIP switches on the LocalTalk PC Card let it respond to one of two card address ranges, to interrupt the IBM PC on one of three priority levels, and to use one of two DMA channels. Figure C-1 shows the DIP switch values. Table C-1 describes the functions of the switches.

The default switch settings shown in Chapter 2 configure the card for DMA channel 1, Interrupt level 3, and address range $24X. These default settings conflict with the COM2 port on your IBM computer. If you use both COM ports for other cards, such as a serial mouse and a modem, the LocalTalk PC Card will not be available at the same time.

	On	Off	
$24X	8		Toward upper-left corner of card
DACK1	7		$22X
DACK3	6		
DRQ1	5		
DRQ3	4		
IRQ2	3		
IRQ3	2		
IRQ4	1		

Switch SW-1
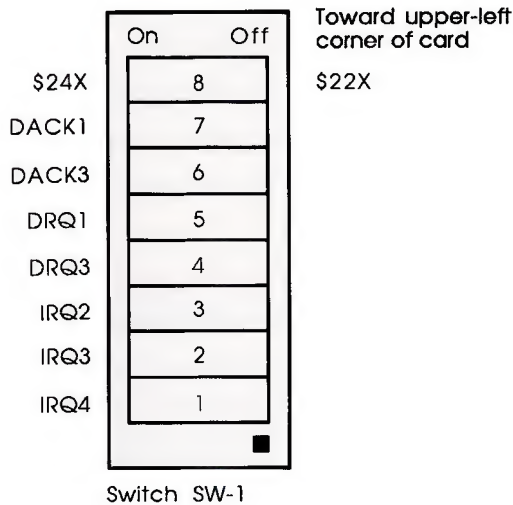
Figure C-1
DIP switch values

Table C-1
Description of the LocalTalk PC Card DIP switches

Switch	Description	Function
1,2,3	IRQ4, IRQ3, IRQ2	Selects "Interrupt Request (IRQ)" priority level.
		One (and only one) of these three switches must be on; the other two must be off. Switch 1 on is IRQ4, which is the same as serial port COM1. Switch 2 on is IRQ3, which is the same as serial port COM2. Switch 3 on is IRQ2. This determines the priority level at which the card will interrupt the IBM computer whenever it changes state. Level 2 has the highest priority, level 4 the lowest. Do not use switch 3 if you have an IBM PC-AT computer.
4,6	DRQ3, DACK3	"DMA Request" and "DMA Acknowledge" on DMA channel 3.
		Both of these switches must be on (and both switches 5 and 7 must be off) for the card to communicate with the IBM computer via DMA channel 3.
5,7	DRQ1, DACK1	"DMA Request" and "DMA Acknowledge" on DMA channel 1.
		Both of these switches must be on (and both switches 4 and 6 must be off) for the card to communicate with the IBM computer via DMA channel 1.
8	$24x/$22x	Selects the address range of the card.
		If this switch is on, the card will respond to control signals sent to addresses in the range $240 to $247. If this switch is off, the card will respond to control signals sent to addresses in the range $220 to $227. Note that the IBM PC I/O addressing scheme allows each card to respond to 32 addresses, but the LocalTalk PC Card uses only 8 of them.

Driver configuration options

You can change the DIP switch settings on the LocalTalk PC Card to remove conflicts with other cards in your system. However, the AppleTalk driver must be told of any changes to the DIP switch settings. This is done by adding one or more parameters after the driver name (ATALK) in the AUTOEXEC.BAT file.

If you have changed the IRQ level from the default of 3, add the parameter /cardint=x, where x is the new IRQ level you have selected (either 2 or 4).

If you have changed the DMA channel from the default of 1 to 3, add the parameter /dma=3.

If you have changed the address range from the default of $24x to $22x, add the parameter /address=220.

For example, the following line in the AUTOEXEC.BAT file will load the driver and configure it for IRQ 3, DMA 3, and address range $22x:

```
ATALK /dma=3 /address=220
```

Appendix D

Error Messages

This appendix lists the error messages, the causes of the errors, and the steps to correct them.

AppleTalk driver error '*message*.'

Cause: A transmission error has occurred on the AppleTalk network system.

Solution: Try sending the file to print again. If the error persists, check the network.

AppleTalk initialization error.

Cause: The AppleTalk driver (ATALK.EXE) is not installed on your hard disk or working Startup disk.

Solution: Reinstall the PC LaserWriter Program.

Bad or missing Command Interpreter.

Cause: The COMMAND.COM file cannot be found, is invalid, or belongs to a different version of DOS.

Solution: Make sure the COMSPEC environment variable is pointing to the correct version of COMMAND.COM.

Can't find *Helpfile* (Filename .hlp).

Cause: A file that contains the information for the help text should have been installed on your working Program disk or on your hard disk. That file cannot be found or opened.

Solution: Load DOS and, using the DIR command, see if the file is on your disk. Use the DOS Copy command to copy the file from the original LocalTalk PC Card Program disk onto your working Program disk or your hard disk.

Can't find printer.

Cause: Networking information sent over the network to the selected LaserWriter has received no response. The network may be experiencing problems, or the LaserWriter may be out of service. This message may also occur if the printer is busy.

Solution: Check the status of the network and LaserWriter.

Can't have identical FROM-TO filenames.

Cause: If you're using the menus, the filenames of the file to print and the Save As: file must be different. If you're converting a file from the DOS prompt, the filenames of the input and output files must be different.

Solution: Change the Save As: (or output) filename. Adding a different extension will work.

Can't open *filename*.

Cause: The name of the file you want to print either doesn't exist or doesn't follow the necessary filename conventions. You've probably misspelled the name, specified the wrong path, or included an illegal character in the name.

Solution: Check the filename and change it as necessary.

Can't open input file *filename*.

Cause: The file you want to print does not exist, or its name is incorrect. You've probably misspelled the name, specified the wrong path, or included an illegal character in the name.

Solution: Check the filename and change it as necessary.

Can't open output file *filename*.

Cause: The filename for the file you want to save does not follow the necessary filename conventions, or there is not enough space on the disk for the file.

Solution: Check the filename and change it as necessary. Use a disk with more free space.

Can't open the environment LW.env.

Cause: A file named LW.env, which contains printer and zone information, should have been installed on your hard disk or on your working Program disk when you selected a zone and a LaserWriter. That file cannot be found or opened. Your floppy disk may be write-protected.

Solution: Load DOS and, using the DIR command, see if the file is on your disk. If the file is not on the disk, select a printer again from the PC LaserWriter Program's Printer Utilities menu. Remove the write-protection.

DOS command could not be executed.

Cause: The PC has insufficient memory to execute the DOS command from the LWDOS> prompt, or the disk in the default drive does not contain the COMMAND.COM file.

Solution: Exit from the PC LaserWriter Program and run the DOS command normally, or make sure that the disk in the default drive contains the COMMAND.COM file.

Error creating temporary file.

Cause: There is not enough memory to create the temporary file (lwps.$$$).

Solution: Break the file into smaller sections and print them separately.

Error in converting *input-filename.*

Cause: The file you want to convert to PostScript either does not exist, or its DOS path is set incorrectly, or there is not enough space on the disk for the file's temporary file lwps.$$$.

Solution: Check the filename spelling or the DOS path. Make sure the file exists in the directory you specify. Use a disk with more free space.

Error in open '*message.*'

Cause: An error occurred as your computer attempted to send data over the AppleTalk network system. The problem is probably with the network and not with the PC LaserWriter Program or your computer.

Solution: Try sending the file to print again. If the error persists, check the network.

Error in printing *output-filename*.

Cause: The file you want to print was converted correctly but cannot be printed on the AppleTalk network system. The network may be experiencing problems, or the LaserWriter may be out of service.

Solution: Check the status of the network and LaserWriter.

Error in sending *output-filename*.

Cause: The PostScript file you want to print cannot be sent over the AppleTalk network system. The network may be experiencing problems, or the LaserWriter may be out of service. The driver may not be loaded.

Solution: Check the status of the network and LaserWriter. Also, make sure you've loaded the driver.

Error: No output file specified.

Cause: You pressed F10 without entering the name of the output PostScript file.

Solution: Enter the filename on the Print menu, or choose the `Print` print option instead of `Save` or `Print/Save`.

Error: No source file specified.

Cause: You pressed F10 without entering the name of the file to print.

Solution: Enter the filename on the Print menu.

Error: Source file does not exist.

Cause: The file specified on the Print menu does not exist.

Solution: Check the filename for spelling errors. If you specified a disk drive, make sure the file is on the disk in that drive.

Error: xxx: offending command: xxx.
Flushing: Rest of job (to end of file) will be ignored.

Cause: A PostScript command has caused the LaserWriter to stop.

Solution: Reconvert the file to PostScript and send it to the LaserWriter again.

Font Information file fontinfo.def file not found.

Cause: The file fontinfo.def, which contains descriptions of fonts, should be on your working Program disk or your hard disk. That file cannot be found or opened.

Solution: Load DOS and, using the `DIR` command, see if the file is on your disk. Use the DOS `Copy` command to copy the file from the original LocalTalk PC Card Program disk onto your working Program disk or your hard disk.

Illegal option *option* ignored.

Cause: An unrecognized option symbol is added to a conversion command at the DOS prompt line. The option will be ignored unless you change the symbol.

Solution: Check the option and make sure it is correct. Reenter the correct symbol. Remember that option symbols must be preceded by a minus sign.

Illegal value for Character Encoding (must be 0, 1, 2, 3, or 4).

Cause: The value entered with the `-i` option on the DOS command line must be one of those listed.

Solution: Enter the proper value.

Illegal value for Character Pitch (must be 10, 12, or 15).

Cause: The value entered with the `-s` option on the DOS command line must be one of those listed.

Solution: Enter the proper value.

Illegal value for Line Count (must be greater than Zero).

Cause: The value entered with the `-n` option on the DOS command line must be greater than zero.

Solution: Enter the proper value.

Illegal value for Lines Per Page (must be greater than Zero).

Cause: The value entered with the `-l` option on the DOS command line must be greater than zero.

Solution: Enter the proper value.

Illegal value for Number Of Copies (must be 1 through 100).

Cause: The value entered with the −c option on the DOS command line must be one of those listed.

Solution: Enter the proper value.

Illegal value for Page Size (must be 0 or 1).

Cause: The value entered with the −z option on the DOS command line must be one of those listed.

Solution: Enter the proper value.

Illegal value for Point Size (must be greater than Zero).

Cause: The value entered with the −s option on the DOS command line must be greater than zero.

Solution: Enter the proper value.

Illegal value for Tabstop settings (must be Integer value).

Cause: The value entered with the −e option must be an integer between 0 and 79.

Solution: Enter the proper value with the −e option.

Illegal value for Tabstop settings (must be less than 80).

Cause: The value entered with the −e option must be an integer between 0 and 79.

Solution: Enter the proper value with the −e option.

Illegal value for Tabstop settings (must be Zero or greater).

Cause: The value entered with the −e option must be an integer between 0 and 79.

Solution: Enter the proper value.

Input file "filename" has ZERO length.

Cause: The list of files referenced with the −f command from the DOS command line does not exist.

Solution: Make sure the filenames are spelled correctly and that they are on the specified disk.

Insufficient memory.

Cause: The file you want to convert or print is too big for your computer's available memory.

Solution: Break the file into a series of smaller files and print them separately.

Invalid MultiMate file format. Terminating conversion.

Cause: The file you specified for printing is not a MultiMate file.

LocalTalk card not responding.

Cause: A system error has occurred on the card.

Solution: Type ATALK and press Return. If that doesn't work, turn off your PC and let it sit for a few minutes. If the problem persists, see your dealer.

NBP Error 'message.'

Cause: An error occurred as your computer attempted to send data over the AppleTalk network system. The problem is probably with the network and not with the PC LaserWriter Program or your computer.

Solution: Try sending the file to print again. If the error persists, check the network.

New Printer name NOT SPECIFIED.

Cause: You tried to rename a LaserWriter, but didn't give it a new name.

Solution: Enter a new name on the Rename menu.

No file specified for conversion.

Cause: You did not enter a filename on the command line.

Solution: Enter the name of the file you want to convert.

No file to print.

Cause: You did not enter a filename on the command line.

Solution: Enter the name of the file you want to print.

No LaserWriters found in your local zone.

Cause: None of the LaserWriter printers on the zone you selected is in service.

Solution: Select a LaserWriter in another zone; turn on the power to the LaserWriter printers in your local zone; check the LocalTalk cable connections on your PC and the LaserWriter.

No match for *filename*.

Cause: The filename you entered cannot be found.

Solution: Check the filename's spelling and enter the proper name.

No room on disk.

Cause: The disk the PC LaserWriter Program is using to store the temporary file (lwps.$$$) or the PostScript file you want to save is full.

Solution: Use another disk, or if the file is very long, break the file into smaller sections and print them separately.

No printers were found on this network.

Cause: No LaserWriter printers were found in the zone of the network you selected. The network or that particular zone may be experiencing problems, or the LaserWriter may be out of service.

Solution: Check the status of the network and LaserWriter.

No zones were found on this network.

Cause: This is an informational message only. No action is required.

Number of copies must be 1 through 100.

Cause: The entry in the `Number Of Copies:` field in the Print menu was not between 1 and 100.

Solution: Enter a number in this range.

Open Done.

Cause: This is not an error message. It informs you that the connection with the AppleTalk network system is successful.

Overwrite *filename*? (Y/N).

Cause: There is a file with the same name as the `Save As:` filename you entered.

Solution: If you press `Y`, that file will be overwritten and its original contents lost. If you press `N`, the conversion will be aborted.

PostScript dictionary lwdict.ps not found.

Cause: The dictionary file lwdict.ps should be on your working Program disk or your hard disk. That file cannot be found.

Solution: Load DOS and, using the `DIR` command, see if the file is on your disk. Use the DOS `Copy` command to copy the file from the original LocalTalk PC Card Program disk onto your working Program disk or your hard disk.

PostScript file *filename* not found.

Cause: Using the `./file` command, you attempted to include a file in a WordStar document, but the file cannot be found.

Solution: Check the spelling of the filename and pathname and make the necessary changes.

Printer error manual feed timeout.

Cause: You selected the manual feed option for paper feed and no paper is being fed into the LaserWriter.

Solution: Have someone feed paper into the LaserWriter when it wants to print your file.

REQUESTED STOP PRINT. PRESS ESC TO CONTINUE.

Cause: The program has encountered the MultiMate "Stop Print" character.

Solution: Press Esc and the printing will continue.

Scale factor must be greater than Zero.

Cause: The value entered with the `-s` option on the DOS command line must be greater than zero.

Solution: Enter the proper value.

Scale factor must be less than 32767.

Cause: The value entered with the `-s` option on the DOS command line must be less than 32767.

Solution: Enter the proper value.

Terminating conversion.

Cause: A network error or program error has occurred. The PC LaserWriter Program may terminate.

Solution: If the program terminates, restart it and begin the printing job again.

Test page file testpage.ps does not exist.

Cause: A file named testpage.ps, which contains the information for a test page, should have been installed on your hard disk or on your working Program disk. That file cannot be found or opened.

Solution: Load DOS and, using the DIR command, see if the file is on your disk. Use the DOS Copy command to copy the file from the original LocalTalk PC Card Program disk onto your working Program disk or your hard disk.

Text Point Size must be greater than Zero.

Cause: The value entered with the -s option on the DOS command line must be greater than zero.

Solution: Enter the proper value.

Text Point Size must be less than 32767.

Cause: The value entered with the -s option on the DOS command line must be less than 32767.

Solution: Enter the proper value.

Transmission aborted by user after sending *xxxx* bytes.

Cause: You pressed the Esc key or the Ctrl-C keys during printing and interrupted the LaserWriter.

Solution: Send the file again for printing.

Unable to open command file *filename.*

Cause: On the command line, you entered the option -f, which specifies "use the command file." That file cannot be opened.

Solution: Check the spelling of the filename and pathname and make the necessary changes.

Undefined offending command.

Cause: Either the LaserWriter doesn't recognize the file you sent for printing as a PostScript file, or the file contains an error. Also, the conversion utility for the application used to create the file may not be on your working Program disk.

Solution: Try to send the file to the LaserWriter again. Use the DOS command `DIR` to make sure the appropriate conversion utility is on your working Program disk.

Unrecognized DOS error xx.

Cause: A DOS system error has occurred during Input/Output.

Solution: Send the file again to the LaserWriter. If the problem persists, consult your DOS reference manual.

Unrecognized option xx.

Cause: The option entered on the DOS command line does not exist.

Solution: Check the option for its form and spelling.

User abort.

Cause: You pressed Esc or Ctrl-C while the computer was making the connection with the AppleTalk network system.

Solution: Resend the file from the PC LaserWriter Program or the command line.

Write error.

Cause: A transmission error has occurred on the network.

Solution: Try selecting the LaserWriter and sending the file again.

Appendix E

PostScript Programming

There are two ways to add PostScript programming features to the files you print with the PC LaserWriter Program. First, you can modify the existing programs included on the PC LaserWriter Program's Applications disk. Second, you can write your own programs and access them with the ./file command.

The second way to add PostScript programming features to your files is to modify the dictionary files that are a part of the PC LaserWriter Program. A typical example of this method is the programming that will let you access LaserWriter fonts not available from the PC LaserWriter Program menus. For example, you can reprogram the file Fontinfo.def that is on your PC LaserWriter Program disk to include fonts such as New Century Schoolbook, Avant Garde, Palatino, and Zapf Chancery, if you have these fonts available.

The examples in this appendix show you how to add a program to print a ruled line on each page, how to change the fonts available for the LaserWriter, and how to change the extended characters available in the character sets. The programs are in the PostScript language. If you are not familiar with PostScript programming, you may want to read one of these books:

Macintosh: Inside LaserWriter, Apple Computer, Inc., 20525 Mariani Avenue, Cupertino, CA 95014.

PostScript Language Manual, Adobe Systems, Inc., 1870 Embarcadero, Suite 100, Palo Alto, CA 94303.

PostScript Language Reference Manual, Addison-Wesley Publishing Company, Reading, MA 01867.

Programming a ruled line

Here is the program that will draw a ruled line from the left to the right margin on a printed page. The program lets you vary the thickness of the line each time you reference the program in the file. This program is in the file Style.ps on your PC LaserWriter Program disk.

```
/Styleline
{    gsave currentpoint 2 copy exch pop 4
     sub XL exch newpath moveto XR XL sub 0
     rlineto 3 -1 roll setlinewidth stroke
     grestore moveto
} def
```

❖ *Note:* The file Style.ps also contains programs for a screen border and a shaded box.

To insert the program into a WordStar or MultiMate file, you can use the `./file` command and the `./cmd` command.

The `./file` command accesses a file that you have stored in one of the dictionaries that are on the PC LaserWriter Program disk. The `./cmd` command sends the file directly to the PostScript interpreter in the LaserWriter.

Here's how to draw a ruled line using the /Styleline program that is in the Style.ps file:

1. Enter `./file Style.ps` at the beginning of your text file.

2. Type the text you want to underline with the ruled line.

3. Enter `./cmd 2 Styleline` and press Return. The 2 is a variable for a 2-point ruled line.

4. Continue with the text file.

For example, to put a ruled line under the title *PC LaserWriter Program,* you type

```
./file Style.ps
PC LaserWriter Program
./cmd 2 Styleline.
```

and the printed result will look like this:

PC LaserWriter Program

You enter the `./cmd` command at each place in the text where you want the ruled line to appear. You can also use the same program to draw the line at a different point size by changing the 2 to another number. For instance, to print a 4-point line, the command would be `./cmd 4 Styleline`.

❖ *Note:* The file userdict.ps on the disk is specifically for your custom programs. You could, however, also store them in the Style.ps file.

Programming additional fonts

The file fontinfo.def, which is on your working Program disk, contains a list of 16 fonts that are available for WordStar and MultiMate files. You can program additional fonts to be available by changing the names in the list. You'll need to use the Edlin file editor that is part of DOS or some other similar editor to change the list. You cannot use some word processing programs to change the list because they add control characters to the file.

The names listed in fontinfo.def are

1. Times
2. Times-Bold
3. Times-Italic
4. Times-BoldItalic
5. Helvetica
6. Helvetica-Bold
7. Helvetica-Oblique
8. Helvetica-BoldOblique
9. Courier
10. Courier-Bold
11. Courier-Oblique
12. Courier-BoldOblique
13. Times
14. Symbol
15. UserFont1
16. UserFont2

If you have a LaserWriter Plus attached to your computer on the AppleTalk network system, the following fonts can be substituted for any of those listed in fontinfo.def.:

AvantGarde®-Book
AvantGarde-DemiOblique
AvantGarde-BookOblique
AvantGarde-Demi
Bookman®-Demi
Bookman-DemiItalic
Bookman-Light
Bookman-LightItalic
Helvetica-Narrow
Helvetica-Narrow-Bold
Helvetica-Narrow-Oblique
Helvetica-Narrow-BoldOblique
NewCenturySchlbk®-Roman
NewCenturySchlbk-Bold
NewCenturySchlbk-Italic
NewCenturySchlbk-BoldItalic
Palatino®-Roman
Palatino-Bold
Palatino-Italic
Palatino-BoldItalic
ZapfChancery®-MediumItalic
ZapfDingbats®

Here are the programming steps to add the font NewCenturySchlbk-Bold in the place of Helvetica-Oblique in fontinfo.def.:

1. Using either Edlin or another text editor, load the fontinfo.def file. The list of 16 fonts is at the beginning of the file.

2. Move the cursor to Helvetica-Oblique.

3. Delete Helvetica-Oblique and enter NewCenturySchlbk-Bold. The new font name must be typed *exactly*, including uppercase and lowercase characters, and spaces.

4. Save the file and return to DOS. The NewCenturySchlbk-Bold font is now part of the PC LaserWriter Program.

Now, whenever you select Helvetica-Oblique from the menus in the PC LaserWriter Program, the LaserWriter will print in NewCenturySchlbk-Bold. The menus do not change to reflect the new font name.

The two fonts at the end of the list, UserFont1 and UserFont2, are the fonts that appear when you enter the control codes that select Symbol Oblique and Symbol Bold Oblique. For example, in WordStar the control characters ^PY^PW^B select the Symbol font; therefore, ^PY^PW^PD would select UserFont1 and ^PY^PW^PB^PD would select UserFont2. .

In addition, other fonts that are not automatically available from the LaserWriter Plus can be purchased on a disk. However, those fonts must be loaded from the disk into the LaserWriter before you have access to them.

You can also program your own fonts using PostScript programming. In that case, you insert the programming into the file userdict.ps on your working Program disk. To access the new font from the menus, select Special at the option line for selecting fonts.

Changing the extended character sets

By reprogramming the files Group1.ps, Group2.ps, and pwlocal.ps, you can create your own set of extended characters. You'll need to know the PostScript name of the characters that you want in the Special set. Refer to a PostScript programming book to get the names of the characters you want.

Group1.ps defines the extended characters for the Character Set: option as International 1, Group2.ps is for International 2, and pwlocal.ps is for the Printwheel option.

To define a set:

1. Using either Edlin or some other text editor, load one of the files. You'll see a section that lists numbers and the character names, for example, 91 /Diaeresis. The number is the ASCII character code, and the name is the character name.

2. Change the names and numbers to be the ones you want. For instance, the PostScript name for the British pound sign is Sterling. To make it correspond to Alt156, enter 156 /Sterling in the program.

3. Save the file under the same name. Return to DOS. Now whenever you select the appropriate Character Set: option from the menus (or from the command line with the -i option), the extended characters you defined are available for printing.

The Character Set: option Special is for defining a completely new set of extended characters. You must create a new PostScript file, it must be named usercode.ps, and it must be saved on the same disk as the other extended character files. The extended characters in your new file will be available whenever you select Special as the Character Set: option from the menus, or the -i4 option from the command line.

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